the OIL AND GAS JOURNAL

MAY 5 1938

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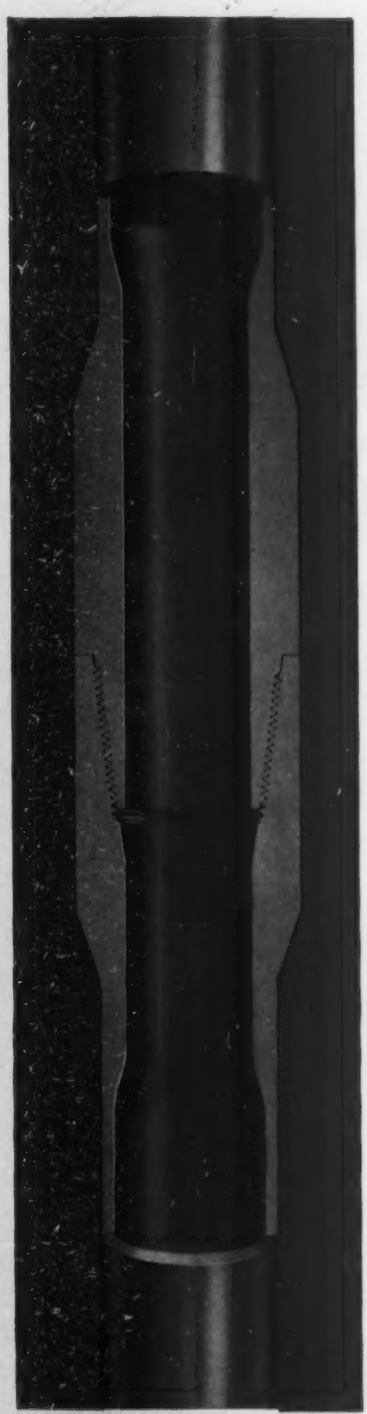

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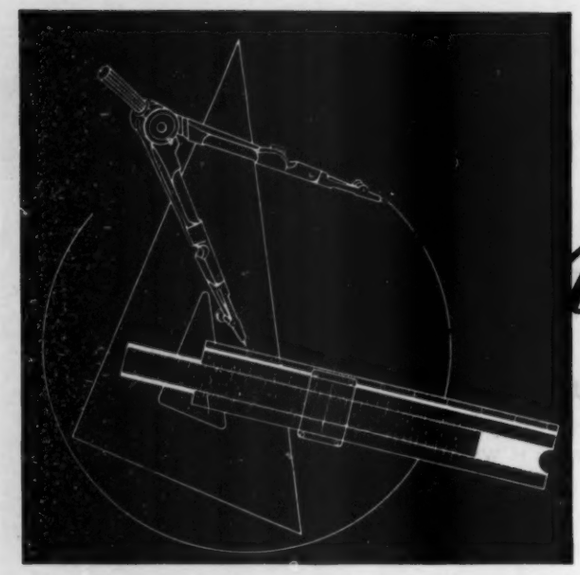

HERE ARE THE *ngineering* REASONS

Why the Baker BALL TYPE Valve (used in Baker Cement Guiding, Floating, Cementing Equipment) IS THE FIRST CHOICE OF MODERN OPERATORS

CORRECT DESIGN

The present design of the Baker BALL TYPE Valve didn't "just happen"—it represents the sum total of specialized knowledge and experience gained over a period of years in the development and manufacture of back-pressure valves for floating and cementing casing.

As shown in Figure 1, the Valve Chamber is so designed that the buoyant Bakelite Ball has only a short vertical distance to travel in order to seat against the resilient Rubber Ring (backed by Bakelite and Concrete). The Baker BALL TYPE Valve action is not dependent upon springs, stems, or other mechanical devices. Instead, the Ball is operated instantly and automatically by positive *natural* forces to provide a perfect seal.

Thus, when running in, the differential hydrostatic pressure holds the buoyant Ball tightly against the Rubber Ring to form a positive, leakproof seal (see Figure 3). During cementing operations, the Ball rests on the three blunt, rounded, supporting fingers of the Valve Stop. (Figure 4).

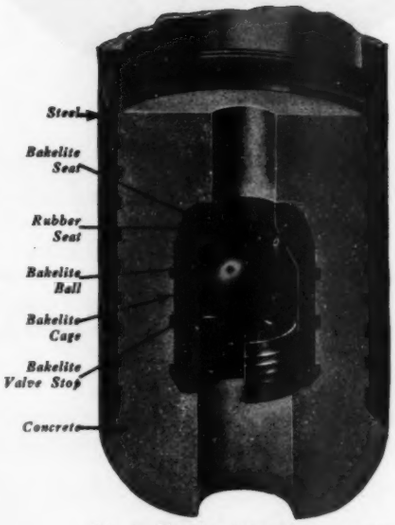

Fig. 1. Showing internal construction of the Baker Cement Float Shoe.

NO MECHANICAL OBSTRUCTIONS

There are no sharp or projecting mechanical obstructions (such as spring or valve stem) to interfere with instant and positive action of this BALL TYPE Valve. While floating in casing, the valve *always* closes, and remains closed. When circulation is started, the Ball moves away from its seat (see Figure 1) and takes its position resting on the fingers of the Valve Stop. No mechanical means are needed to guide the Ball to its seat — no fragments or other debris can be lodged to prevent positive sealing — no abrasion of the smooth spherical surface will prevent a complete seal against either high or low back-pressure.

FOR FULL DETAILS concerning the BALL TYPE Valve used in all Baker Cementing Guiding, Floating, Cementing Equipment, see the Baker Section of your 1938 Composite Catalog—or write for your own copy of the individual Baker Catalog.

Fig. 2. Here is the Bakelite BALL TYPE Valve used in all Baker Floating Units.

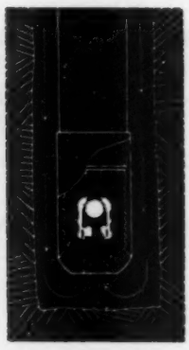

Fig. 3. Showing Bakelite Ball seated.

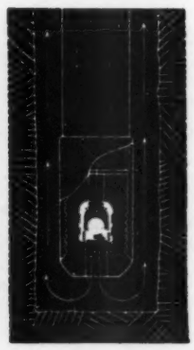

Fig. 4. Bakelite Ball unseated during cementing.

The BALL TYPE Valve is an EXCLUSIVE BAKER Feature

Before Baker adopted the present BALL TYPE Valve as standard in its Guiding, Floating, and Cementing Equipment, a number of types and designs of valves and valve assemblies were experimented with. In fact, the original Baker Float Shoe, manufactured in 1923 had a cast iron "poppet type" valve. During the refinement of the Baker Float Shoe, cast iron as a material, and the "poppet type" valve, were discarded in favor of non-metallic materials which resulted in the greatly desired Drillability feature and the BALL TYPE Valve which resulted in greater Valve Efficiency.

Today the Baker BALL TYPE Valve is an *EXCLUSIVE* Baker Feature and is ONE outstanding reason for the widespread preference for Baker Cement Guiding, Floating, Cementing Equipment among modern operators who demand the advantages of VALVE EFFICIENCY, DRILLABILITY AND STRENGTH.

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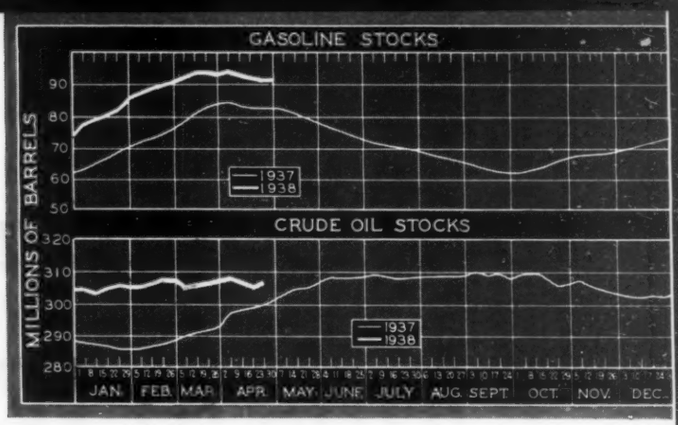


Lower May Oil Output Probable

A MAY crude oil production substantially lower than April's was in prospect at the start of a new month. While some of the state conservation commissions have not announced their allowables for May, developments of the past week indicate that the industry generally has been thoroughly sold on the necessity of getting started on a program which calls for steady reductions in excess inventories accumulated earlier this year and last year.

CRUDE PRODUCTION *3,393,042 barrels daily average—down 34,856 barrels.*

CRUDE STOCKS *307,654,000 barrels as of April 23—up 880,000 barrels.*

GASOLINE STOCKS *91,339,000 barrels as of April 30—down 140,000 barrels.*

REFINERY RUNS *3,215,000 barrels daily week ending April 30—up 65,000.*

Should the state proration bodies fail to go along on this program and refuse to reduce allowables in line with the requirements of crude purchasers, it is probable that the buyers will extend pipe line proration to accomplish the desired ends. The proration authorities had hoped to be able to increase allowables this month, and are now reluctant to accept the lower schedules. The position of the crude buyers reflects that of their refinery connections. Excess inventories of gasoline with even more burdensome accumulations of fuel oils in some cases have caused a majority of refiners to reduce their crude purchases.

In California the Central Committee will attempt to bring about a reduction of approximately 100,000 barrels daily in crude production. It is recognized that the rapid accumulation of stocks there since the first of the year must stop if present prices for crude oil and refinery products are to continue in effect. Arkansas' production of more than 50,000 barrels daily will be reduced in May owing to pipe line proration and the conservation regulations which are at last being made effective in that state.

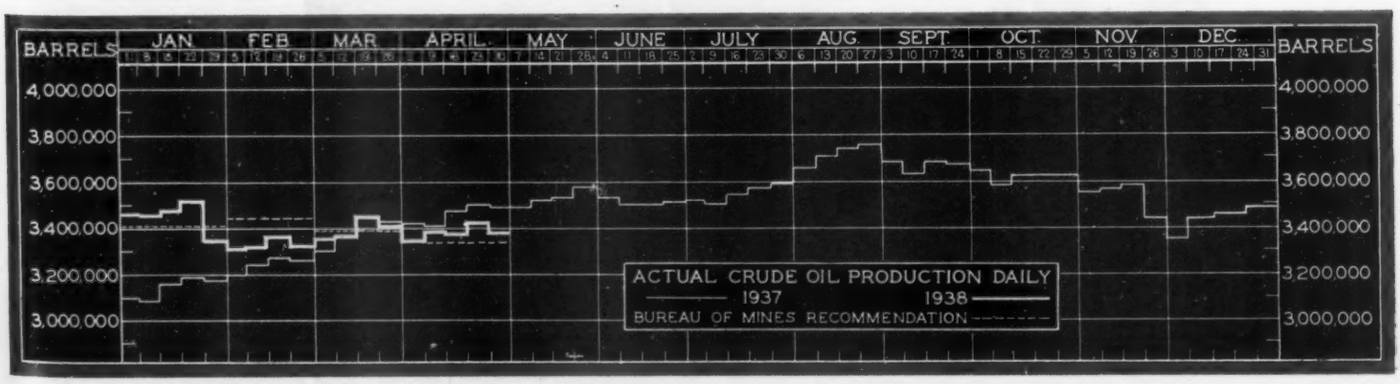
The Oklahoma-Kansas situation is confused. There is little likelihood that Kansas demand for greater outlets at the expense of Oklahoma will be met and due to a lessened demand it is probable that the output of both states will be reduced through the extension of pipe line proration. Texas has a tentative allowable slightly less than that of May, but revisions later in the month may change this situation. The buyer requirements of New Mexico crude will be lowered, with Louisiana's May allowable about the same as in April. Pipe line proration, of minor importance so far, has been made effective in North Louisiana.

While gasoline shipments from refiners are showing the expected seasonal increase, reductions in the heavy inventories are not being accomplished as rapidly as hoped for early in April. Observers are fearful of price trends over the next 90 days unless large reductions become effective immediately in several refining areas where stocks are particularly heavy.

Daily Average Production for Week

	Apr. 30 1938	Bur. Mines Apr. est.	Apr. state allowable	Apr. 23 1938
Oklahoma City	101,750	.....	.....	123,475
Fitts	50,825	.....	.....	55,050
Remainder of state	321,300	.....	.....	320,900
Total Oklahoma	473,875	526,500	475,000	499,425
East Texas	433,198	.....	.....	432,400
West Texas	197,500	.....	.....	196,150
North Central Texas	106,950	.....	.....	106,748
Texas Panhandle	70,700	.....	.....	62,096
East Central Texas	103,250	.....	.....	100,700
Gulf Coast Texas	334,697	.....	.....	335,953
Southwest Texas	106,403	.....	.....	105,504
Total Texas	1,352,698	1,329,800	1,318,427	1,339,551
North Louisiana	76,715	.....	.....	79,985
Gulf Coast Louisiana	183,900	.....	.....	182,500
Total Louisiana	260,615	239,800	252,275	262,485
California	710,200	698,700	698,700	728,750
Kansas	177,750	173,000	173,000	181,900
Arkansas	54,520	40,000	.....	53,705
Eastern fields	142,100	132,600	.....	141,100
Michigan	52,114	51,400	.....	51,062
New Mexico	106,010	106,000	106,000	105,890
Rocky Mountain area	63,160	63,900	.....	64,030
Total United States	3,393,042	3,361,700	.....	3,427,898

Decrease, 34,856 bbls. daily.



Oil Compact Commission Plans to Widen Activities

By C. O. WILLSON

WICHITA, Kans., Apr. 30.—Climaxing a week of meetings here and elsewhere, the Interstate Oil Compact Commission closed at noon a two-day quarterly session which was characterized as the "most constructive ever held." Getting away from the backslapping and routine activities which have marked sessions of the past, the commission conducted what amounted to an open forum on the present ills of petroleum. They conferred with leaders of the industry and well-known consultants and discussed more freely than ever before the causes and solutions of troubles reflected at this time in excess production and burdensome inventories.

Developments here today and yesterday had as a background the annual meeting of the Western Petroleum Refiners Association earlier in the week; demands for greater outlets for Kansas crude by Governor Walter A. Huxman on Monday to a group of crude oil purchasers at Topeka; state proration hearings, and a meeting of the executive committee of the Independent Petroleum Association of America here on Thursday.

Briefly summarized the outstanding developments of the week were:

Governor Huxman demands reallocation of markets to the end that present outlets for Kansas crude will be expanded. He threatens to support federal control of the industry and pipe line divorcement if this is not done.

Alfred W. White, head of the petroleum economics division of the Bureau of Mines, which compiles the monthly estimates of petroleum requirements, says that the bureau has no authority to reallocate existing markets arbitrarily.

Independent Petroleum Association's executive committee in a prepared statement contends that flush fields must bear the greater part of the proration burden, and not the small settled areas.

Dr. Joseph E. Pogue presents demand data showing that average crude production and refinery runs to stills must be kept below present levels the second quarter in order to liquidate excess inventories and bring about a healthy statistical situation later.

Major companies, due to the governmental attitude as reflected in the Madison trial, will not initiate or participate in agreements involving the movements of petroleum supply and demand.

Dr. Alexander Sachs, noted economist, strongly supports compact as opposed to federal control. Economics committee appointed to consult with commission along the lines suggested by Doctor Sachs.

Dr. E. E. Plummer, of the University of Texas, suggests study of water-oil ratios with the view of reducing operating costs and increasing ultimate recoveries.

C. M. Boggs, veteran Kansas refiner and president of the Western Petroleum Refiners Association, continues in position expressed at Hot Springs that refinery products must be advanced in line with posted crude schedules or the latter must come down.

Governor's Contention

Governor Huxman, attending his first meeting of the compact commission yesterday, elaborated on the views which he first made known to the group of crude purchasers at the Topeka meeting Monday. At the Topeka meeting he demanded that the markets for Kansas crude be increased 33,000 bbls. daily in May, this gain if necessary being provided for through a decrease in Oklahoma purchases.

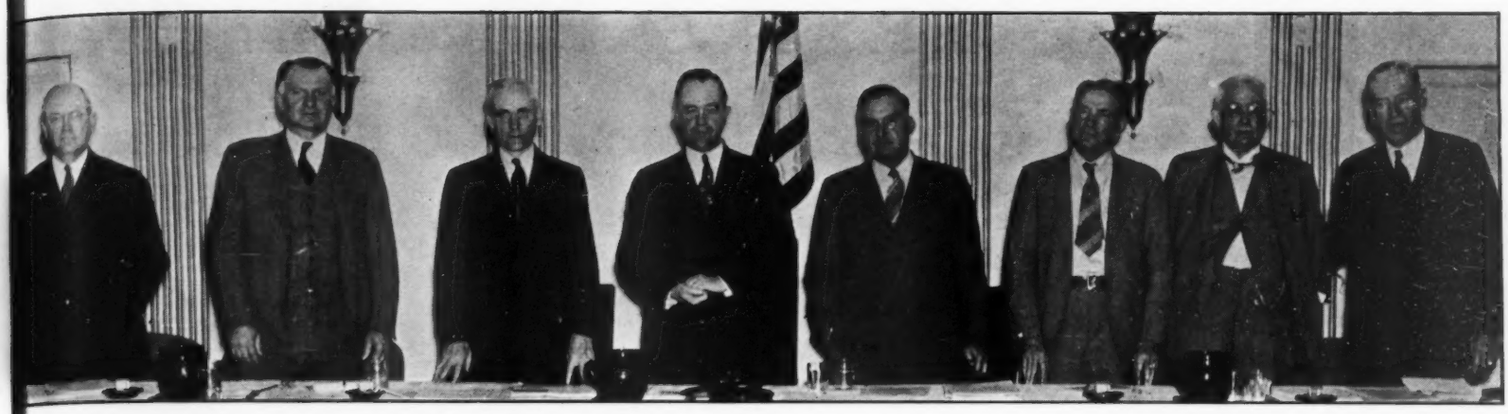
The governor is a forceful speaker and with his facts well in hand he presented a position which has strong support among many Kansas operators. He has been governor of the state a little over a year and is a candidate for reelection. He has never been engaged in the oil business and frankly stated that what he knew about the industry was largely based on what he had learned since he became the state's executive head.

He contended that the present method of estimating demand by the Bureau of Mines and major purchasers has not been fair to Kansas producers. He pointed to the large increase in the state's potential production due to the discovery of new fields. This potential is now more than 3,000,000 bbls. daily, with the present allowable output approximately 5 per cent of that potential.

"Kansas and Oklahoma today share a common market," said the governor, who obviously hopes to secure a larger market for Kansas crude through reduced takings in Oklahoma. "I ask you whether an imaginary line—the state boundary separating the two states—can divide an economic market, where wells are producing 100 per cent and only 330 feet away are wells prorated to only 2 per cent of their potentials." In this statement he made special reference to one field in which wells are located in both Oklahoma and Kansas.

Emphasizing his threat to support federal control unless he gets what he considers a

COMPACT ADVISORY COMMITTEE ON ECONOMICS—*Joseph E. Pogue, Alexander Sachs, E. de Golyer*



TERSTATE OIL COMPACT COMMISSION AT WICHITA—*Tom Anglin, Oklahoma; Ernest E. Blincoe, Kansas; Gov. W. A. Huxman of Kansas; Col. O. Thompson, Texas, chairman; Hiram M. Dow, New Mexico; William Bell, Illinois; Warwick W. Downing, Colorado; W. H. McFadden, Oklahoma*

more equitable distribution of markets, the governor said: "No state is going down without making a fight. We need a more binding force to prevent federal control. Unless we strengthen this existing compact there is yet a sadder day for the oil industry. If we don't do it it will then be necessary for the federal government to intervene."

De Golyer Suggests Method

The governor's plea precipitated a discussion which continued within and outside the meetings and about which more is certain to be heard in the future. His plea for reallocation of markets was supported by E. I. De Golyer, Dallas, Tex., operator and widely known consulting geologist, who was one of the "experts" invited by Col. E. O. Thompson to "advise" the compact members at this meeting.

Mr. De Golyer said he agreed there should be adjustments in market outlets among the states, based on changes which have brought large increases in potential production through new fields in some areas and little change in others. He suggested that basing a state's share of the total market on the known reserves might be considered in working out this problem.

He presented figures showing that the present production in relation to the known oil reserves was on a basis of 1 bbl. of daily production to 4,500 bbls. of known reserve. The approximate ratios of some of the oil states, he said, are: Oklahoma, 3,100; Kansas, 8,500; Texas, 6,100, and Louisiana 2,800. Application of this plan would greatly expand the markets for Kansas and Texas crude and reduce those of Louisiana, Oklahoma and some of the other states.

Mr. White, who was present as an observer for the Bureau of Mines, explained that his department had no authority to reallocate production among the states. The method used by the bureau, as explained to the industry several times in the past, starts with requirements of the several refining areas. The demand for a given month having been determined, it is apportioned among the crude-producing states largely on the basis of their previous participation taking into consideration changes in stocks as well as current needs. Mr. White maintains that while this system does not react quickly to shifts in crude production trends, it does over a period of time reflect changes in both supply and demand. It is the contention of Governor Huxman and others that this method is not sufficiently flexible to provide outlets for new areas.

Less Demand

Doctor Pogue, vice president of the Chase National Bank, New York, in his paper on "Economic Balance and the Demand for Oil in 1938," presented estimates showing an increase of less than 2 per cent in gasoline demand over 1937, with domestic requirements running less than 1937 the latter part of this year. He stressed the necessity of liquidating excess inventories accumulated in the form of crude oil and refinery products over the past year.

"As a result of overproduction in 1937 and some overages in the first quarter of 1938, the industry has an inventory that stands in need of liquidation," Doctor Pogue explained. "This fact, therefore, may properly be taken into account in establishing production schedules. In the 12 months ending February, 28, 1938, stocks of refinable crude oil increased 16,400,000 bbls.; stocks of motor fuel, 14,300,000 bbls.; and stocks of all other products 25,300,000 bbls., a total addition to storage of 56,000,000 bbls., or an average of 153,400 bbls. per day. This volume, in general, should be viewed as advance production that does not need to be produced a second time."

In making his recommendations regarding needed crude production and crude runs to stills, Doctor Pogue estimated that the domestic gain for motor fuels would be 1.3 per cent for the year, and exports 9.6 per cent, with a total demand increase of 1.9 per cent. He estimated for the year that domestic consumption of fuel oil will decline 6.9 per cent, exports .8 per cent, with a total decline of 6.4 per cent. He recommended that by the end of the year, based on days' supply, motor fuel stocks should not exceed those of 1937 and 1936. With these requirements in mind he arrived at the following summary table covering 1938 operations compared with 1937:

	1937 actual	1938	Change
Crude to stills	3,242,000	3,188,000	—1.7%
Domestic crude required	3,456,000	3,392,000	—1.9%
Change in motor fuel stocks	14,200,000	—2,800,000	
Change in crude stocks	16,100,000		

Quarterly Requirements

Divided as to quarters for 1938 his recommended operation for the year follows:

	1938 First quarter (actual)	Second quarter	Third quarter	Fourth quarter	Year
Changes in total motor fuel demand	3.3%	1.7%	0.6%	3.6%	1.9%
Motor fuel stocks end of period	92,400,000	83,100,000	70,300,000	72,000,000	72,000,000
Crude to stills (daily)	3,136,000	3,164,000	3,240,000	3,210,000	3,188,000
Domestic crude output required (daily)	3,357,000	3,332,000	3,447,000	3,428,000	3,392,000
Change domestic crude stocks (daily)	42,000	0	—30,000	—12,000	0

"When the schedule is thus analyzed on a quarterly basis, it is felt that the indicated seasonal increase in crude oil demand is so small that it would be far better to forego it entirely and maintain an unexpanded rate of oil production in favor of a slight liquidation of the crude inventory," Doctor Pogue said. "Furthermore, it should be noted that the computed volume of crude oil required for the second quarter is 3,332,000 bbls. daily, which is below the current output. Hence a conservative approach to the remainder of the second quarter is believed to be a producing level little in excess of 3,300,000 bbls. daily."

Support for a conservative operating schedule over the remainder of the year came from Charles F. Roeser, of Fort Worth, Tex., president of the Independent Petroleum Association of America, who recommended a crude production of 2,700,000 bbls. daily for the territory east of California until September 30. Mr. Roeser said that the responsibility for balancing supply and demand rested with the state conservation bodies, explaining that the executives of major companies will not enter into programs as they have in the past due to the expressed attitude of the government.

In this connection the formal statement issued by Ralph B. Roark, vice president of the Shell Petroleum Corp., at the hearing before the governor on Monday has caused considerable comment here. The statement follows:

"Shell Petroleum Corp. does not need to defend itself as far as concerns its willingness to act for the good of the oil industry. Its past record is sufficient proof of its desire to adjust its own situation for the common good, even at the expense of some loss. It does refuse, however, at this time to enter into any agreement, arrangement, or understanding of any kind which has for its purpose, either directly or indirectly, or which will bring about the result either directly or indirectly, control of the price of crude oil, and recognizing that almost any conceivable agreement among producing or purchasing companies which is not specifically authorized by law may easily be constructed or construed to be an arrangement to eliminate competition, create a monopoly, or be in restraint of trade, in violation of some phase of federal or state laws, Shell must of necessity decline to be a party to any such agreement."

Dr. Alfred H. Bell, state geologist for Illinois, presented a report with maps and graphs reflecting the increasing importance of that state in crude production. The report showed that the present production of the state is approximately 40,000 bbls. daily, coming largely from the 12 new fields. The fields have 428 wells, of which only 25 are flowing.

"Federal control is not the solution of the problems of the oil industry, but an abdication," Doctor Sachs said in a well received address in

which he gave strong support to the compact plan of operation. Doctor Sachs was prominent as a consultant in the NRA days. He recommended the compact plan as consistent with industrial stability and desirable because of the flexibility it provides for economic progress. He suggested methods for assuring the continuity of the compact and the expansion of its activities. He recommended a permanent advisory economic council which would conduct investigations and make recommendations as to how the compact could serve best the interests of the industry.

Speaking of the broad issues of industrial freedom and governmental control, Doctor Sachs said: "Our problem is to find the balances between the old of complete freedom and the new of too much regimentation."

Doctor Sachs, Doctor Pogue, and Mr. De Golyer were appointed to the membership of an advisory committee on economics. Two more members will be added by Colonel Thompson later. Members of the compact adopted a resolution suggesting to this committee the advisability of recommending a 15 per cent reduction in crude runs to stills by refiners over the next 60 days. This would bring about a healthy gasoline stock situation by July 1 if carried out by refiners, according to Colonel Thompson.

Well Spacing

Members of the commission informally discussed the problem of well spacing just before the session was adjourned today. Among several members of the compact and representatives of the industry there is a feeling that a lack of uniform practices among the states in regard to well spacing and the taking of potentials and other technical matters is a major contributing factor to the industry's present critical position.

Questioning of Colonel Thompson by Oklahoma, Kansas, and New Mexico members of the compact indicated a critical attitude in regard to well spacing practices in Texas. Colonel Thompson explained that each area was considered by itself in determining well spacing. Unless the property was secured after the pool was discovered the Texas Railroad Commission permits drilling on small tracts without regard to the general rule of one well per 10 acres. Colonel Thompson said the state was protecting the small operators. He explained that in arriving at a solution to this problem it was necessary to take into consideration that more drilling increased employment, added to the taxable property of the state and counties and also in his opinion increased ultimate recovery of oil. Other members of the commission leaned to strict enforcement of well-spacing regulations with the owners of small tracts to share in production on a basis of acreage and not the number of wells that they might drill.

Guests at Dinner

Members of the commission and others attending the sessions were guests of the recently organized Kansas Independent Oil and Gas Association at dinner Friday night, of which H. E. (Herb) Meyers is executive manager. E. E. Blincoe, member of the commission from Kansas, presided as toastmaster. Brief talks were made by Russell B. Brown, general counsel of the Independent Petroleum Association; E. B. Swanson, assistant director of the Petroleum Conservation Division of the Department of the Interior; W. H. McFadden, independent operator, and several members of the commission.

The next meeting of the compact commission will be held in Colorado Springs, Colo., July 29 and 30. The fall meeting probably will be held in Tulsa at the time of the annual meeting of the Independent Petroleum Association of America.

I.P.A.A. Executive Committee Asks Cut to 2,700,000 Bbls.

WICHITA, Kans., Apr. 28.—The executive committee of the Independent Petroleum Association of America following an all-day meeting adopted a resolution calling upon producers east of California to reduce their production to 2,700,000 bbls. daily. It was stated that this was all the production justified by current consumption taking into consideration the need to reduce excess inventories.

The committee also condemned the practice of some purchasers in prorating old settled fields in order to provide outlets for flush pools. The following statement regarding conditions in the oil industry was issued by the committee this evening:

"The petroleum industry during the year 1937 suffered from excess production of crude petroleum to the extent of approximately 45,000,000 bbls., which is now represented in excessive inventories of refined products and crude petroleum.

"From January 1, 1938, to March 31, 1938, stocks of gasoline have increased approximately 15,910,000 bbls. From the present indications of consumptive demand it would appear that demand for the year 1938 will be on a level approximating that of the year 1937. On this assumption, a continuation of crude oil production on the basis of 1937 would only result in the continuation of excessive inventories, the effect of which is depressing on the economic conditions within the industry. To reach a sound inventory position by September 30, 1938, we should reduce our stocks of motor fuels to approximately 62,000,000 bbls. In order to accomplish this condition it will be necessary to maintain a production level for the territory east of California of an average daily rate of approximately 2,700,000 bbls., thus enabling a proper withdrawal of motor fuel from stocks and at the same time provide sufficient working stocks to maintain the industrial activity and meet normal demands. The producers' attention is called to the fact that in order to prevent waste within this industry they cannot expect any increase in crude oil production allowables during the summer months.

"This committee on March 14, 1937, called the attention of the industry and the regulatory bodies to the probable consequence of excess production, as has now been realized, that would result from relying upon the demands of the purchasers for excessive quantities of crude oil as evidenced by their nominations to the various state regulatory bodies. It now appears that the fears expressed then, of reliance upon nominations by purchasers, were justified and had the producers and regulatory bodies relied upon the estimates furnished by the Bureau of Mines, which now prove to have been within 1 per cent of the actual consumers demand, the inventory position of the petroleum industry would now be sound.

"In some areas there has been a tendency on the part of producers, who are indifferent to sound conservation principles, to produce oil from certain wells in such large quantities as to create underground physical waste.

"The action of purchasing companies in some states in prorating wells of small and settled production, while at the same time they are taking oil from the larger or flush producing wells in excessive quantities, is contrary to sound conservation practices and should be discouraged. The carrying out of a sound conservation program necessitates flush wells bearing the greater burden of proration in order to conserve reservoir energy.

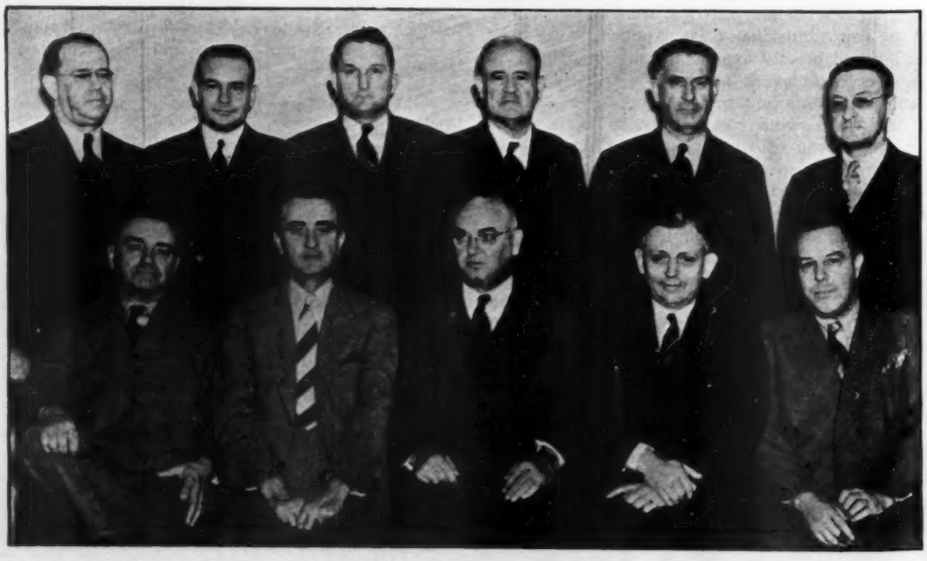
"The equitable administration of an over-all conservation program contemplates that there be equitable distribution of allowables between states the same as there is equitable distribution of allowables between fields within a state and between wells within a field.

"The increasing tendency to continue the practice of drilling unnecessary wells within proven fields is having the effect of causing a declining per well allowable for existing wells. We again call the attention of the producers of the United States to this dangerous tendency to add unnecessary costs to an already overburdened industry."

Canadian Gas Production And Consumption Figures

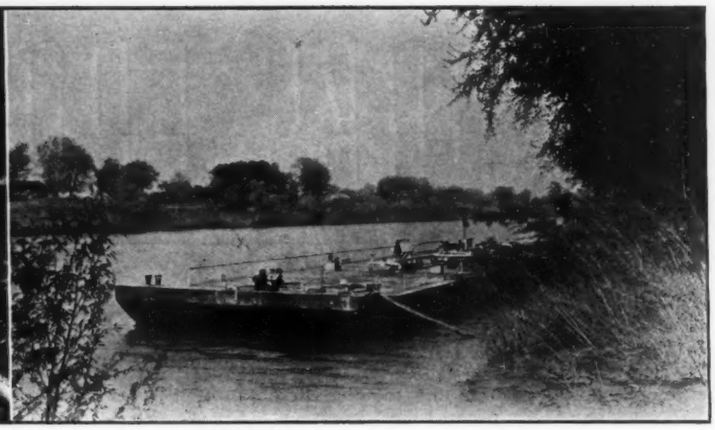
OTTAWA, Ontario.—Natural gas marketed from all Canadian fields during February totaled 4,010,772,000 feet compared with 4,025,936,000 feet in January and 3,479,000,000 feet in February, 1937. Production for the two months of 1938 reached 8,036,708,000 feet, compared with 7,531,000,000 feet in the same period last year.

Imports of mixed (natural and artificial) gas into Canada in February amounted to 14,716,000 feet, valued at $9,278, against 11,211,000 feet valued at $6,727 in January.



I.P.A.A. EXECUTIVE COMMITTEE AT WICHITA—*Seated: E. B. Shawver, Wirt Franklin, Charles F. Roeser, Co. Harold B. Fell, Russell B. Brown. Standing: C. E. Buchner, Weston Payne, J. A. Aylward, N. T. Gilbert, Van S. Welch, H. M. Stalcup*

Surface connections on Hoosier Drilling Co. No. 1 Blackwell well, Henderson County, Kentucky



Filling a 4,500-bbl. capacity barge on Green River with oil from Hoosier Drilling Co.'s new well

River Barges Handle West Kentucky Oil

By L. G. E. BIGNELL

With the completion of Hoosier Drilling Co., No. 1 Blackwell in Henderson County, Kentucky, April 22, as a 1,200-bbl. producer from a lime formation topped at 1,872 feet and drilled 2 feet into the pay, the population of Western Kentucky has visions of oil fields throughout the region to equal or surpass the oil fields of Illinois. This well is reported to have found its production in the McClosky lime, a section of the Ste. Genevieve formation of lower Mississippian age. The name "McClosky" comes from Illinois and the geological name for this producing formation is Fredonia lime. It is usually an oolitic limestone and it is reported that in the Blackwell well it is particularly porous which may account for the relatively high rate of production of this well. It started to flow at the rate of 45 to 50 bbls. per hour and filled twenty-four 100-bbl. steel tanks before relief was secured by laying a pipeline about three-fourths mile from the tank battery to the Green River where the oil was loaded into a 4,500-bbl. river barge and delivered to the Aetna Oil Co. refinery in Louisville. It is reported the well has been cut back to 65 per cent of its initial capacity to conserve reservoir energy.

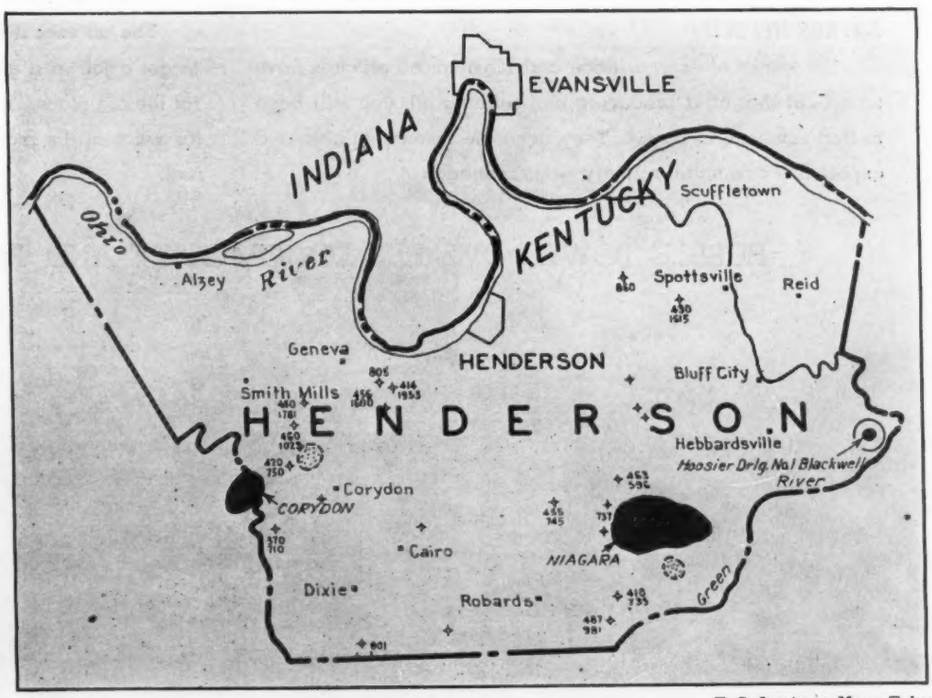
This discovery has started an intensive lease play over the entire area in Western Kentucky adjacent to this well site and it is reported W. E. Hupp and associates purchased between 400 and 500 acres from Hoosier Drilling Co. offsetting the No. 1 Blackwell well. Carter Oil Co., interested in the original well, has made a direct offset location to be known as No. 1 Lannie Mauzy on the O. L. Boswell lease and is rigging up a rotary outfit from Illinois. W. E. Hupp is also moving in a rotary outfit on the Mrs. Gatewood farm. Hoosier Drilling Co. has made another location on the C. T. Blackwell farm, and J. C. Ellis is moving in on the Kendrick A. Jones lease about 3,960 feet southwest of the new well. It is reported Kendrick A. Jones was paid $5,000 bonus for his rights in this small tract while his brother Harry Jones, chief toll taker on the Evansville-Henderson bridge, sold a half interest in his farm for $6,000.

No. 1 Blackwell well has not been deepened and still produces from the hole 2 feet in the pay horizon. This condition is partly due to the manner in which the well was cased and capped when production was struck. It is reported the surface string of casing is 8¼-inch diameter and set at 1,390 feet with shoe. The hole was then reduced and drilled to 1,708 feet where a string of 6⅞-inch casing was set with shoe. The top of the Mississippian lime is reported at 1,785 feet and the hole is bottomed at 1,874 feet.

Drilling reports indicate two fresh water formations encountered above 1,500 feet and a flow of gas from sand between 1,538 and 1,555 feet, variously estimated from 500,000 to 2,000,000 feet. Below this gas sand a salt water formation was found at about 1,632 feet but the flow could not have been very heavy because the open hole was carried to 1,708 feet before the string of 6⅞-inch casing was run.

With this kind of a completion job the drillers were unprepared to handle the head flows which the well made after the bit had penetrated the lime formation about 2 feet. As the oil was running over the ground and into the area surrounding the well it was necessary to bring the well under control quickly. This was done by screwing a

(Continued on Page 18)



E. C. Jacobson, Maps, Tulsa

Sketch map of Henderson County, Kentucky, showing location of Hoosier Drilling Co. No. 1. Blackwell well, near the Green River

SPARKS FROM THE NEWS

OIL AND OUTLET

Owners of wildcat well in Henderson County, Kentucky, quickly laid a short line to Ohio River, brought in a barge and had an outlet through a Louisville refinery.

MOST ACTIVE

The most active spot in the industry is the International Petroleum Exposition's grounds at Tulsa where more than 700 concerns are installing exhibits.

POLITICS

With most of those connected with state conservation bodies running for office, an observer at the Wichita compact meeting lists "politics" as a major factor in the troubled oil situation.

FAVORABLE SIDE

On the favorable side is the 46 per cent gain in crude oil exports the first quarter over same period last year and the 8 per cent gain in gasoline sales to foreign buyers.

BUYERS NEEDED

Six weeks of expropriation and Mexican oil officials have found out that after producing and refining oil, you still have to find someone to buy it. They need the resourcefulness and experience of a small refinery sales manager.

DOUBLE INCENTIVE

Curtailment of pipe line purchases and desire to place the field on a sound operating basis are to bring reductions in Shuler, Arkansas, field production.

NEW LEADER

K.M.A. supplants East Texas with 181 drilling wells and 48 rigs up.

WARNING

The Kansas governor, who threatens federal control, should keep in mind that if it becomes effective, production tax revenues accruing to oil states will be reduced or ended entirely.

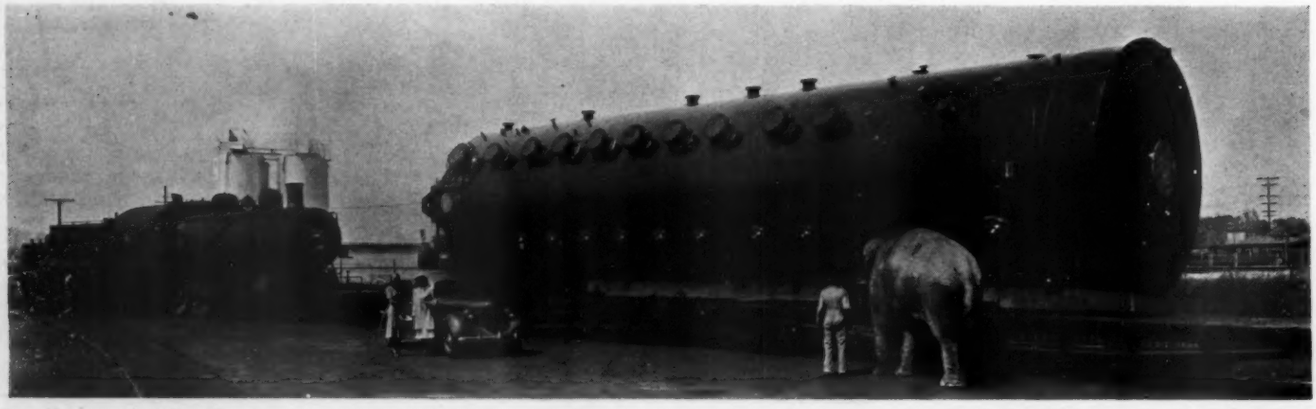
A JOB

Voluntary proration supporters face the problem of reducing California's crude output 100,000 barrels daily in May to balance supply with demand.

NO DISDAIN NOW

The oil executive who as a boy disdainfully left the farm to get a job in a going industry has acquired a fresh respect for the old place. The farmer is affording the principal market for what at the moment is oil's most active product. Tractor fuel.

BUBBLE TOWER DWARFS LOCOMOTIVE AND TARZAN'S ELEPHANT



A 300,000-pound bubble tower for Richfield Oil Corp., Watson, Calif., refinery is 60 feet long and 13 feet in diameter, the heaviest and bulkiest piece of freight ever carried by the Southern Pacific Railroad

FAVORABLE TRENDS IN FOREIGN OIL SUPPLY AND DEMAND

By H. STANLEY NORMAN

NEW YORK, May 2.—Foreign demand for petroleum is increasing at a rate more rapid than experienced currently in this country. This conclusion is based on scattered and incomplete evidence, but sufficient data are available for confirmation.

The foreign "demand" can not be positively translated into terms of "consumption" since the volume of petroleum consumed or stored for military purposes in Europe and elsewhere is just as indeterminate now as during the past two or three years. Efforts of oil company representatives in foreign countries to obtain sufficient information on storage abroad to make an intelligent estimate on actual consumption are looked upon with suspicion.

The most tangible evidence of increased petroleum demand abroad is found in production trends from the most important oil countries. Venezuela production in March was only slightly greater than in the comparable month of 1937, but for the first quarter the margin this year over last year is substantial. Venezuela produced approximately 43,627,000 bbls. during the first quarter of 1938 compared to about 35,677,000 bbls. for the same three months last year.

Netherlands East Indies is producing at approximately the same rate obtaining at the close of 1937 and output for the first quarter this year is estimated at 14,300,000 bbls. compared to about 13,125,000 bbls. for the same time last year. Slight adjustments have taken place in the relative activity of individual companies in the East Indies, but the overall picture is on a higher scale than prevailed during the early part of 1937, indicating that markets normally supplied from that source are improved.

The broad picture is not without its danger signs, however. One is found in curtailment of its exploitation program in Venezuela by one of the largest operators in that country. At the start of the year the company proposed to drill approximately 350 wells in one field during 1938, but the program has been curtailed to a point where 75 to 100 wells will be the maximum unless activity is doubled or trebled in the remaining months.

The abrupt cessation of operations and shipments from Mexico in the middle of March will require eventual realignment of supplies, but no disarrangement of consequence is anticipated by those companies which formerly exported 25,000,000 to 26,000,000 bbls. annually from that country. The daily average supply of about 71,000 bbls. formerly drawn from Mexico can be supplied from a variety of sources. Temporarily, at least, the United States is in position to benefit most substantially from the shift necessitated by Mexico's seizure of producing lands, equipment and refineries. Eventually, the Barco concession in eastern Colombia and greater withdrawals from Venezuelan fields probably will replace Mexican oil, if that base of supply is permanently lost to the marketing facilities of private companies.

Crude from the Barco concession, jointly controlled by Texas Corp. and Socony-Vacuum, probably will not be available for world markets until early 1939. In response to questions at the annual meeting of Texas Corp. stockholders last week Capt. T. Reiber, chairman, said the pipe line from the Barco concession to a Colombian port would be completed early next year at a cost estimated between $10,000,000 and $11,000,000. Wells so far completed on the Barco are capable of producing 30,000 bbls. of crude daily as a minimum.

Without benefit of the Barco production, Colombia is currently producing more than 56,000 bbls. per day compared with about 47,150 bbls. per day for the first three months of 1937.

Depletion of old fields without benefit of new discoveries has turned the production curve in Peru downward, but the losses so far have been slight. For the first three months of 1938 Peru produced at the daily average of 44,535 bbls. against 47,145 bbls. for the same period in 1937. As in Colombia, exploration in Peru is being pushed into new areas with possibilities of opening new production. The prospects for additional discoveries are held in favor particularly in Colombia where previous wildcat drilling has given indications of other productive territories.

Available production records indicate that Iraq output has declined slightly the first three months of this year compared to last, but shipments from the dual terminal arrangement at Tripoli and Haifa have increased. In fact, shipments reported from the two terminals so far this year are in excess of production. Shipments through March totaled 7,908,700 bbls., compared to 7,616,150 bbls. for the same three months in 1937. At the same time production was reported off from 7,674,630 bbls., registered in the first quarter of 1937, to 7,595,000 bbls. for the first three months of this year.

Insufficient information is available on Iran to give a clear-cut picture of the 1938 production trend. However, yield for the first month of this year totaled 769,000 tons compared to 750,000 tons for the same month in 1937 and early indications are the country will enjoy another record-breaking year. Total output for 1937 was 10,167,795 tons. Converted to barrels on a basis of 7.51 bbls. per ton the output last year was 76,360,140 bbls., or a daily average of 209,178 bbls. On the same basis, January production was at the daily average of 186,296 bbls., but a good part of last year's increase was registered through the middle six months. The daily average output for January this year was approximately 4,600 bbls. higher than for the same month in 1937 which is probably indicative of the trend. Being an important supplier of Great Britain's petroleum requirements, it is logical to assume Iran will replace at least a part of the Mexican products formerly consumed.

Production from Bahrein Island has assumed a definite position in far eastern and near eastern

Edwin C. Bartz photo

Liner "Bremen" being fueled in New York harbor

markets. Production during the first quarter of 1938 is estimated at 2,263,180 bbls., compared to actual output of 2,079,191 bbls. for the same period in 1938. The increase is not of major importance in itself, but with gains also reported from competitive areas such as Iran and Iraq it assumes more significance in an analysis of foreign petroleum consumption.

Behind the early indications that petroleum demand abroad is increasing at a more rapid rate than in the United States is a relatively satisfactory volume of automotive sales. The expansion of automobile use in Europe and other foreign countries, particularly South America, was marked in 1937 and, judging from business of American manufacturers, the trend is maintained this year.

Actual sales have declined slightly from 180,077 units in the first quarter of 1937 to 162,418 units for the same three months this year. The figures represent exports of American manufactured cars, Canadian exports by American manufacturers and foreign sales of units assembled by American companies from American products abroad. The sales figures include both passenger cars and commercial units.

Venezuelan drilling crew in action at Taparito

In drawing a comparison between the rate of increased petroleum demand abroad and in this country, it is significant to note that the 162,418 units sent into foreign trade the first three months this year represented about 24 per cent of the total American automobile production which amounted to 669,369 units. During the same period in 1937 when 180,077 units were distributed abroad the total represented only 13.8 per cent of the business on 1,302,108 vehicles.

Results for the first quarter in foreign automobile business indicates that 1938 will show a reasonably satisfactory comparison with 1937 in final results, particularly if the expected upswing in general trade develops in the last four or five months and is transmitted to foreign markets which have not suffered to the extent prevalent in this country. Progress made last year in European utilization of automobiles was regarded satisfactory. It is estimated that motor vehicles in use at the end of the year totaled about 8,200,000 units, an increase over 1936 of nearly 8 per cent. The increase in 1936 amounted to only 5 per cent. Doubtless the armaments boom acted as a strong stimulus, but was not solely responsible for the increase.

Great Britain continues to head the list with automotive units in service and because of its complete dependence on outside sources of petroleum is an important factor in world oil trade. It is estimated Great Britain had nearly 2,500,000 vehicles in service at the end of 1937 and new registrations for the year amounted to 318,500 compared to 310,000 for the preceding year.

The increase of United States crude oil exports has been particularly outstanding, although all products with exception of residual fuels and lubricating stocks have enjoyed some increase in foreign trade. Department of Commerce, Bureau of Foreign and Domestic Commerce, statistics for the first three months of 1938 show crude oil shipments to foreign countries and United States possessions at 17,402,000 bbls., compared to 10,569,000 bbls. for the same period in 1937. The increase is more than 64 per cent and is considerably greater than even the most optimistic ventured at the start of the year. Gasoline exports are up more than 11 per cent from 8,044,000 bbls. to 8,973,000 bbls.

The increase in gas oil and distillate fuel oil exports is almost 30 per cent this year with shipments of 7,221,000 bbls. for the first three months compared to 5,604,000 bbls. for the same period in 1937. Kerosene exports are up more than 8 per cent to 2,072,000 bbls. for the first three months. Residual fuel oil exports are off about 5 per cent and lubricating oil shipments are down less than 1 per cent.

All of the loss in export business for residual fuel oil was incurred during the first two months since March shipments did an about-face and even went ahead of those registered in the same month last year. In the other products March exports business generally followed the trend set during the first two months although crude oil is gradually stretching its margin of gain.

It is growing increasingly evident that export business is again becoming an important factor in the domestic oil industry. But for the crude oil exports averaging about 193,355 bbls. per day for the first three months of 1938 domestic producers would have suffered greater restrictions.

The tension existing in Europe has been one stimulating factor in the United States petroleum export trade, the Sino-Japanese conflict has contributed, but the greater shipments have been directed to many countries enjoying a peaceful outlook indicating that greater demand is going in part to fill a normally expanding demand for petroleum.

MOTOR VEHICLES IN EUROPE

New Registrations

	Private cars		Goods vehicles	
	1937	1936	1937	1936
United Kingdom	318,500	310,000	101,000	103,400
Germany	216,500	213,100	45,200	45,700
France	161,800	166,200	23,200	23,900
Italy	34,200	21,100	5,500	3,400
Belgium	22,400	16,000	7,200	5,500
Sweden	25,300	18,200	9,900	8,100
Denmark	9,100	7,200	3,100	2,500
Holland	15,500	12,200	6,000	5,200
Czechoslovakia	11,100	10,000	1,800	1,100
Switzerland	8,700	8,400	1,000	900
Eire Ireland	10,000	8,100	2,700	2,400
Norway	6,900	4,600	4,600	4,200
Austria	4,600	4,500	800	700
Finland	3,900	1,700	4,700	2,800
Poland	6,800	3,500	2,600	1,100
Rumania	3,200	1,800	1,200	800
Hungary	3,500	2,600	300	300

UNITED KINGDOM PETROLEUM IMPORTS

(Figures in barrels)

	Jan.-Feb.	
	1938	1937
Netherland W. Indies	5,902,370	3,197,630
Iran	2,356,030	2,519,285
United States	1,710,370	1,186,170
Iraq	887,770	544,915
Mexico	841,485	1,032,030
U.S.S.R.	642,855	338,655
British W. Indies	478,000	667,600
Venezuela	484,170	207,200
Rumania	408,115	1,053,915
Peru	323,200	522,745
Netherland E. Indies	30,570	40,200
Trinidad	168,885	142,945
Others	673,685	912,655
Total	14,871,505	12,365,945

U. S. MARCH EXPORTS

	1938	1937
Crude	6,121,153	3,196,000
Gasoline	2,815,647	2,388,611
Kerosene	534,556	448,000
Gas oil distillate	2,724,353	1,925,000
Residual fuel oil	1,396,762	1,359,000
Lubricating oil	642,936	717,000
Wax*	15,520,605	22,820,000

*Pounds.

U. S. FIRST QUARTER EXPORTS

	1938	1937
Crude oil	17,402,000	10,569,000
Gasoline	8,973,000	8,044,000
Kerosene	2,072,000	1,904,000
Gas oil distillate	7,221,000	5,604,000
Residual fuel	3,301,000	3,475,000
Lube oils	2,275,000	2,292,000

RIVER BARGES

(Continued from Page 15)

common type casinghead on top of the 6⅝-inch string of casing and driving a wooden plug into the hole in the tubing gland on top of the head. To the two outlets strings of 2-inch pipe were connected with common plug valves in the line near the head for control. These two flow lines ran to the tank battery.

The annular space around the outside of the 6⅝-inch casing and the inside of the 8¼-inch string was packed as the 8¼-inch casing also had a common casinghead on top of it. The well flows the oil through the 6⅝-inch string but an occasional head flow of water and gas will occur through the annular space between 6⅝-inch and 8¼-inch casing and out of the 8¼-inch casing head because it leaks around the 6⅝-inch casing. This is all shown in the accompanying picture of the wellhead connections.

The Hoosier Drilling Co. No. 1 Blackwell discovery well is the fourth test in this immediate neighborhood. The nearest other well was drilled on the Jennie Wilson farm in Bon Harbor Hills about 4 miles east of the Blackwell farm. This test was drilled by Paul F. Dahlgren of Bartlesville, Okla., and completed in August, 1929, at a total depth of 1,835 feet. Blue Lick water was found at 1,830 feet which caused the hole to be abandoned. Above the Blue Lick water at 1,730-35 and 1,755-60 feet two streaks of green shale were penetrated. This shale is in the Ste. Genevieve formation and suggests there may be deeper producing horizons in No. 1 Blackwell well.

Considerable geophysical work has been done throughout the entire Western Kentucky region and it is reported Magnolia Petroleum Co. has a geophysical crew of 22 men working in Henderson County and adjacent territory. It is further reported that in Union County, adjoining Henderson County on the southwest, about 125,000 acres is under lease out of a total of 200,000 acres in that county. This land is leased by both large and small oil operators.

Because the formations near Owensboro are in a basin and these formations rise to the eastward and are faulted, the oil companies are carrying on geophysical exploratory work to the west of Owensboro in Henderson and Union counties. Now that oil has been found in the Fredonia lime in the No. 1 Blackwell well and more than 50 test wells drilled previously in northwestern Kentucky penetrating into the Ste. Genevieve formations from a few to several hundred feet with oil showings ranging as high as 20 bbls., it seems probable this portion of Kentucky will witness the drilling of many deeper test wells this summer. It is predicted that, where the oolitic limestone is found with minimum of cementing material and maximum porosity, wells of commercial importance will be developed.

Campaign to Reduce Gasoline Tax Launched in W. Virginia

CHARLESTON, W. Va., May 2.—A militant campaign to eliminate the 1-cent extra state gasoline tax and the federal duplicating tax was outlined by the West Virginia Petroleum Association during its first annual convention at the Daniel Boone Hotel here last week.

The group of more than 200 producers, refiners and marketers, organized less than a year ago to fight "disproportionate taxes" and look after the legislative interests of the state's petroleum industry, mapped plans for perfecting 55 county organizations to advance a seven-point program.

As outlined by J. C. King, vice president of the association and division manager of Standard Oil Co. of New Jersey, Charleston, the program will include:

1. Urging the elimination of the 1-cent temporary emergency gasoline tax at its expiration on July 1, 1939.

2. Urging that the state of West Virginia strictly adhere to fundamentally sound economic principles in the financing of its highway program, so that the "highway revolving fund" may be reduced materially and eliminated eventually.

3. Opposing all proposals to divert gasoline tax and other motor vehicle revenues to purposes other than highway debt service, construction and/or maintenance.

4. Urging the active participation of all persons connected with the petroleum industry in every legitimate movement to promote safety on the highways.

5. Giving assistance to state and federal authorities in the detection and elimination of gasoline tax evasions.

6. Urging the repeal of the unfair and unjust federal gasoline and lubricating oil taxes.

7. Opposing all unfair tax proposals and other legislative measures, whether federal, state or local, inimical to the petroleum industry and its customers.

Resolutions expressing the association's position on these points were adopted unanimously.

Addresses pointing out the high rate of taxation on the petroleum industry and its products and stressing the need for organized action were delivered by Gen. Baird H. Markham of New York City, executive director of the American Petroleum Industries Committee; Edwin F. Patrick, Parkersburg, secretary of the state association; J. E. Jones, Parkersburg, zone manager of Pure Oil Co., and Vice President King.

State Road Commissioner Burr H. Simpson of Charleston outlined the highway planning survey and the problems confronted by the state in financing its road program. He said that if the gasoline tax is reduced, the state has two alternatives:

"1. Adoption of a lower level of road maintenance and construction—for we must pay our bonded indebtedness first.

"2. Raise new revenues from other sources."

Neither the road commissioner nor the convention group suggested the sources for "new revenues." Mr. Simpson said:

"The American Truck Manufacturers Association reports that 1,600 communities in West Virginia are dependent upon trucks, and therefore highways, for commercial transportation. Most of these communities are on secondary roads, many of which are unimproved, some impassable at certain seasons of the year. How much gasoline and oil would you expect to sell to a man during the months he cannot use his car because of impassable roads?

"This year we expect to surface 250 miles of secondary roads with receipts from this extra 1-cent levy on gasoline. Last year we surfaced 194 miles. Next year we will be able to hard surface additional secondary road mileage, until the revenue produced by this tax is exhausted. The levy expires July 1, 1939. This is in keeping with your announced desires. But can you reasonably expect further secondary road improvements in the face of our financial situation? If so, can you point out how this work can be financed? Based upon requests and demands made to the road commission, I am forced to believe our people desire a more elaborate program in both primary and secondary systems. But, desires cannot go beyond our financial ability.

"It is commonly stated that a reduction in gasoline taxes would free money, especially among persons in lower income brackets, for purchase of gasoline, accessories, and even newer, better cars. There are many cars of old vintage in this state, and most of them are in rural sections. Why? Because the gasoline tax is high? Every evidence points to the condition of unimproved roads as the deciding factor in most cases. Why is rural West Virginia considered a good market for second-hand cars—a sort of dumping ground for discarded vehicles in metropolitan centers like Pittsburgh? Because the new, low-slung cars are not as useful on unimproved roads as old, high-wheeled vehicles, and because it would be most uneconomical for a rural resident to invest $1,000 in a car to be driven over a $300 road.

"The importance of good roads is more fully demonstrated when we study West Virginia's principal exception to this rule—Jefferson County, where a surfacing program begun many years ago by the county gave it a high percentage of surfaced secondary roads. There, our survey shows, is found a high percentage of new cars among rural residents."

General Markham outlined the growth of the nation's tax bill and pointed particularly to the tax burden of service stations and the petroleum industry as a whole in West Virginia.

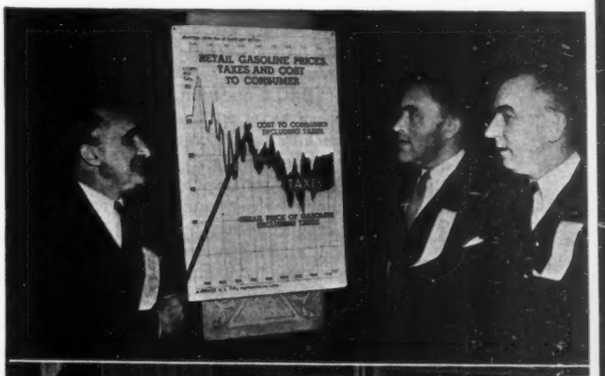
Taxes on gasoline were equivalent to one-third of the gross gasoline receipts of service stations in West Virginia, he said, and added:

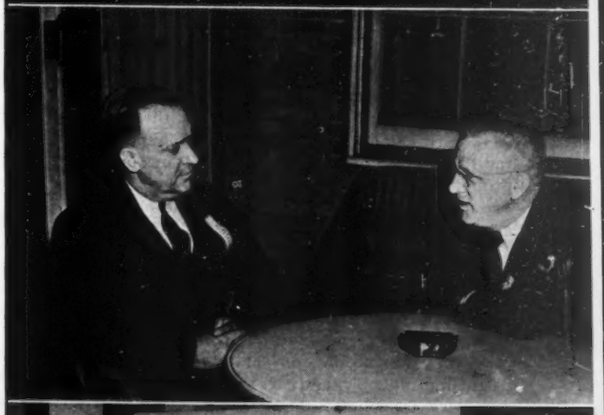
"This means that the purchasing power of your customers is only two-thirds of what it might otherwise be. Every third sale you make constitutes merely a tax payment; putting it another way, every third day is a 'blank' because you are merely working for the tax collector."

General Markham said a majority of West Virginia motorists earn $20 to $30 a week, or less.

"They have no great ability to pay high taxes. The annual burden of gasoline taxes in West Virginia is equivalent to one or two weeks wages of a substantial part of its motorists. Obviously that is a heavy penalty to pay for their use of the highways.

"Since more than half of the automobiles now





Top: J. E. Jones, Pure Oil Co., Parkersburg, W. Va., discusses chart with F. A. Hamilton, Standard Oil Co., Hagerstown, Md., and John W. Wright, Elk Refining Co., Charleston, W. Va. Center: G. L. Gardner, Sun Oil Co., Kenova, W. Va., and J. C. Megraw, superintendent Pure Oil Co. refinery at Cabin Creek, W. Va. Lower: Secretary Edwin F. Patrick, Vice President J. C. King, and President W. A. Jackley, of West Virginia Petroleum Association

in use in West Virginia have a value of less than $150, the annual gasoline tax burden on these vehicles—owned chiefly by families with modest or low incomes—averages 20 to 25 per cent of the valuation of the motor vehicles. When the registration fee is added to the gasoline tax burden, the overall tax on motor vehicles in many cases will amount to more than one-third of the value of the vehicle.

"Contrast that rate of taxation with that on real and personal property. In West Virginia taxes on real and personal property have been set by a constitutional amendment at rates ranging from one-half to 2 per cent depending on the location and type of the property."

State Policy Criticized

After criticizing the state's policy of highway financing, General Markham declared that the taking over of the county roads by the state has added to the tax burden of the motorists.

The temporary tax on gasoline could be removed without injury to the highway needs of West Virginia "if proper readjustments were made in the state's taxing and financing methods," he said.

"It is significant to note that approximately 9 per cent of the total real estate assessments in West Virginia are on the properties of the petroleum industry in the state. Besides paying taxes on that property, the oil industry in the fiscal year ended June 30, 1937, paid $1,425,529 in gross sales taxes on the production of petroleum and natural gas. The oil industry also paid heavy franchise and other corporate taxes.

"Following the enactment of the tax limitation amendment, annual receipts from property taxes have declined by $15,000,000, or more than 50 per cent. It is excellent for a state to give relief to its taxpayer citizens. Our federal, state and local governments should concern themselves with that objective. But I question the wisdom of lifting the burden of taxation from one group and saddling it upon another. Taxes can only be reduced effectively by economy in government.

"If there is to be tax relief, why should not the petroleum industry, which annually creates millions of dollars of purchasing power in West Virginia, be included in such a program?"

"Most assuredly, you have much to think about," he declared. "You have much to bind you together in working for the common good of yourselves and your customers. The situation calls for cooperation of every last man in the oil business in West Virginia, from the highest executive down to the man at the gasoline pump. The program of the West Virginia Petroleum Association is a standard around which should rally all persons whose livelihoods are derived from the production, refining or marketing of petroleum. Competitive differences can be forgotten, and all groups in the industry can bend their efforts toward insuring the attainment of the objectives of the program."

He concluded by declaring that "today we are faced with trends that are curtailing our tax liberty and threatening our economic life. Economic death will follow if we fail to resist."

Both Mr. Patrick and Mr. Jones illustrated the heavy tax burden on the motorists and the petroleum industry, and Mr. Patrick declared that "contrary to popular thought, the petroleum industry does not receive any great return on its investment.

"For the 16 years ending in 1936," he said, "the average return on the investment of the petroleum industry was 1.35 per cent. But the taxes on the industry and its products aggregated 5.34 per cent. For every dollar paid out in dividends, the tax collector took four dollars."

Mr. Jones concluded his brief address by saying "that taking thought for the taxpayer should be the duty of every citizen of West Virginia. Taking thought, not that taxes may be shifted, for ultimately the money must come out of the pockets of the same citizens. Taking thought, not that the responsibility for paying taxes may be evaded or avoided, for that is not the path of civic duty. But taking thought for the taxpayer that our highway debt may be reduced, our highway taxes made reasonable, and our highway system developed in accord with the principles of sound financing. Taking thought for the taxpayer that the taxpayer may benefit, but not be burdened, by the highways he uses."

President W. A. Jackley presided at the four-hour business session, which was opened by an address of welcome by Mayor D. Boone Dawson of Charleston. The response was delivered by John W. Wright, Charleston, retail sales manager of Elk Refining Oil Co.

Pipe Line Proration Now Effective in 7 States

Sinclair Prairie Oil Marketing Co. will reduce purchases of crude oil in Oklahoma 8,000 to 10,000 bbls. daily, effective as soon as a plan to reduce takings from certain properties can be worked out, it was announced Monday. The company's pipe line proration will not be general over the state, being confined to several areas, but will mean a cut of about 10 per cent in Oklahoma purchases. The company is getting more oil than it has a market for, necessitating this cut, according to Nelson K. Moody, president.

Pipe line proration is in effect in Kansas, Oklahoma, Texas, Louisiana, Arkansas, New Mexico, and Illinois. Kansas and Oklahoma producers are hardest hit, as pipe line proration in the other states named is relatively small.

In Kansas, in April, Stanolind Crude Oil Purchasing Co., which was given an allowable of 27,400 bbls. in runs from that state, reduced this figure 25 per cent, or 6,850 bbls. per day. Phillips Petroleum Co., with an allowable of 17,350 bbls. a day, cut this down 25 per cent, or 4,325 bbls. per day. Sinclair Prairie Oil Marketing Co. cut off 15 per cent of its takings, or from 21,500 bbls. a day to 18,275 bbls. a day. Kanotex cut off 1,000 bbls. from its 4,000-bbl. allowable, and the Texas Co., with an allowable of 17,700 bbls., cut 10 per cent from that figure.

In Oklahoma, Carter Oil Co., effective April 10, with an allowable of 55,625 bbls. per day, cut its runs 20 per cent from that figure. The southern fields of the state were affected about 3,000 bbls. per day. Shell Petroleum Corp., with a 29,000-bbl. daily allowable, cut 20 per cent on the same day. Shell withdrew as a buyer in the Oklahoma City field on April 15. Barnsdall Refining Co. cut 1,000 bbls. a day off its 4,000-bbl. daily allowable, effective April 21, affecting Osage and Tulsa County pools. Globe Oil & Refining Co., with a 1,500-bbl. allowable, withdrew from Oklahoma City on April 15 and ran no oil thereafter in the state.

At last week's meeting in Oklahoma City, Magnolia Petroleum Co. announced that if Oklahoma's May allowable is kept at 475,000 bbls. it will positively prorate its runs. Rock Island Refining Co. is taking only 80 per cent of its allowable in some southern Oklahoma pools, but 100 per cent in others.

In North Texas, Stanolind Crude Oil Purchasing Co., with an allowable of 8,700 bbls., cut this figure 12 per cent. Effective May 1, Gulf Refining Co. will take a maximum of only 100 bbls. per day per well from the Jefferson-Lodi area, or Texas side of the Rodessa field. The allowable is 130 bbls. per well per day. It has only a 4-inch line into the field, and the action is temporary, pending decision to loop the line.

In New Mexico, the Shell Petroleum Corp., with an allowable of 31,000 bbls., cut this 20 per cent in Lea County, effective April 10.

In North Louisiana, Caddo Crude Oil Purchasing Co., with an allowable of 11,000 bbls. a day, reduced this 25 per cent on April 11.

In Arkansas, Root Refineries cut to 125 bbls. per well in the Shuler field, or a maximum of 4,000 bbls. per day, and Lion Oil & Refining Co. is taking only its own oil from the Shuler field, cutting off its purchases.

In Illinois, Owensboro Pipe Line Co. and Illinois Pipe Line Co. cut their runs in the Centralia field to a maximum of 20 bbls. per well per day, effective April 20.

In the Bradford field, in Pennsylvania and New York, Kendall Refining Co., Quaker State Oil Refining Corp. and United Refining Co. have announced a further cut of 10 per cent in their May runs of crude oil. The three companies had been running 85 per cent in April from the Bradford field, and the new order cuts this to 75 per cent. The action was caused by a continued increase in the stocks of crude and refined oil and a drop in the prices of bright stock and neutral oils.

Oklahoma May Allowables

Daily allowable production of crude in Oklahoma in May will be approximately 455,000 bbls., if a recommendation to be made by W. J. Armstrong, state conservation officer, is adopted by the corporation commission. The May market demand for Oklahoma was estimated at 510,300 bbls. daily by the Bureau of Mines.

After a meeting with representatives of pipe line companies in Tulsa Tuesday, Mr. Armstrong said he would recommend to the corporation commission the May allowable be set at 475,000 bbls., less reductions made in areas where pipe line companies are prorating their takes. The reductions would amount to approximately 20,000 bbls., bringing the actual allowable to around 455,000 bbls.

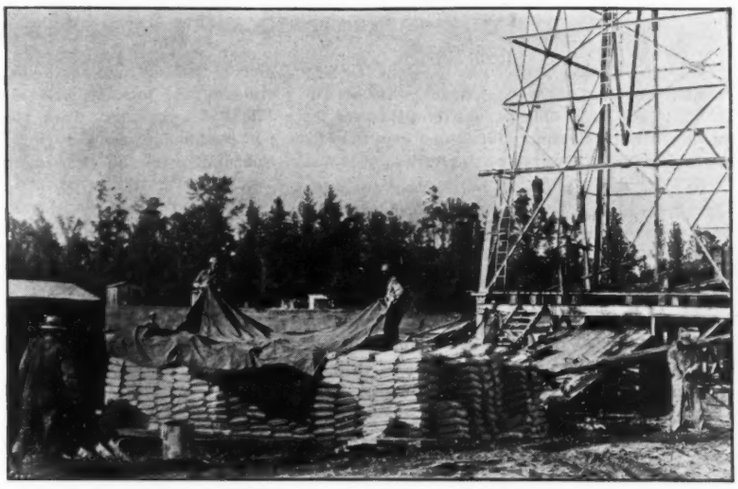
Nominations for May, made by company representatives at the Tulsa meeting, totaled 474,193 bbls. daily, but that figure was reduced to 449,193 bbls., when one company reduced its nomination from 75,000 bbls. to 50,000 bbls.

Summer Refinery Shut Downs

Five refineries of the Sinclair Refining Co. will cease operations some time between the present and July 1 according to a statement made by Nelson K. Moody, president of the Sinclair Prairie Oil Marketing Co., on Tuesday. The plants affected are at Sand Springs, Okla., crude oil capacity 6,000 bbls. per day; Coffeyville, Kans., capacity 12,000 bbls.; Kansas City, Kans., capacity 11,000 bbls.; Fort Worth, Tex., capacity 4,000 bbls., and Parco, Wyo., capacity 8,000 bbls. The shut down will be temporary.

Pressure Decline Forces Action By Arkansas in Shuler

By GEORGE WEBER



Active development requires considerable cement. About 1,500 sacks stored on this lease

EL DORADO, Ark., Apr. 29.—Expressing alarm at the rapid pressure decline in the Shuler (Union County) field, the Arkansas Board of Conservation today took corrective action. In order to study the effect of curtailed withdrawals on the reservoir pressure, and to determine other fundamental forces governing production in the Jones sand, the total allowable for the field has been fixed at 6,924 bbls. daily.

The drastic move undertaken by the board follows a similar order issued last week in regard to production in the South Miller County extension of the Rodessa field. Results of this aggressive policy on the part of the state are expected to be far-reaching in future conservation of reserves in Arkansas.

A special session of the conservation body was called to study the latest pressure survey made in the field and to act upon the information which it revealed. The pressure of the Jones reservoir on April 26 stood at 3,154 pounds, a decline of 66 pounds since March 31, and a total drop of 366 pounds since the field was originally produced. Reduction of the per well allowable in the past few weeks from a top of 800 bbls. per day in February showed some effect in the increase of the barrels per pound drop from 4,146 in March to 4,574 in April. The recovery is nevertheless considered as much too small, and a serious effort is under way to determine the critical production for the field.

In regard to the recovery factor, O. C. Bailey, chairman of the Board of Conservation, stated: "The board felt that this recovery per pound change in reservoir pressure is entirely unsatisfactory. The majority of the operators in the field favored a field-wide shutdown until the pressure had reached a state of equilibrium. However, the board felt that it could not do this because the wells now drilling in the field would experience difficulty in procuring fuel. It decided, therefore, to restrict production for a period of 30 days to the minimum that would allow sufficient gas for drilling rigs."

Board's Position

The market position of Shuler crude was weakened last week by an announcement of the Lion Oil Refining Co. of El Dorado, stating that effective May 1 that company would discontinue purchases of Shuler production. In the past Lion has been the principal buyer of the crude, but its own production has reached a stage where it will supply the company's needs, and in line with its agreement with producers during the early stages of Shuler production, the company withdraws from the field as a buyer.

The statement of O. C. Bailey continues: "It has been recommended to the board that now is an opportune time to perform this experiment in that one of the major operators has in storage some 300,000 bbls. of oil, placing the industry in the position of being able to fulfill its market requirements for some time, irrespective of the production from the Shuler field.

"Since the Shuler field is comparatively young, great care is being exercised in the observation of engineering data in the field to determine which of the two motivating forces is responsible for the production of oil from the reservoir; that is, whether the energy is derived from the force of water drive or the force of expanding gas. In the absence of active water drive when the gas pressure has decreased to approximately atmospheric pressure, it results in there being little differential pressure between the sand and the well bore, and production ceases even though from 50 to 75 per cent of the oil may remain in the reservoir never to be recovered by ordinary methods.

Encroaching Water

"The effect of encroaching water is another source of native reservoir energy, and if the rate of oil production is regulated or timed to the movement of water through the formation, it will assist in increasing the ultimate recovery and postpone the day of secondary methods of recovery. The rate of water movement in the reservoir is still an open question, however, and only through observation can it be determined."

Under the direction of A. M. Crowell, chief conservation agent, a control chart of the field has been originated. The chart shows the relationship existing between withdrawals from the reservoir and the attending pressure decline. This chart indicates that at the present rate of production the flowing life of the field may last for only 18 months. Noting this, Chairman Bailey states:

"While the board cannot consider economics in its order, it is, nevertheless, interesting to know that it will cost approximately 35 to 40 cents for every barrel lifted by artificial means from the Jones sand of the Shuler field. Therefore, even though the price of oil for the Shuler field is now 85 cents, or 16 cents lower than the posted price for North Louisiana and Arkansas, if it becomes necessary to lift the crude artificially, the money derived will be only approximately 35 cents per barrel.

"The board believes that while it assembles and distributes facts for the help and guidance of the industry, the development of the state's resources should be supplied by the initiative of the people, and that the industry should keep close control of its own affairs; however, it feels that by efficiently controlling production, the flowing life of the Jones sand of Shuler can be indefinitely prolonged, and the operator, the land and lease owner, the royalty holder and the people of the state will be benefited."

In the order setting the May allowable at 6,924 bbls. daily, as compared with the 16,900 bbls. total placed for the field on April 1, the critical rate of production is explained. It is represented as the maximum rate which will give the greatest ultimate recovery by extending the flowing life of the field, prevent rapid exhaustion of the dissolved and free gases, cause edge water encroachment uniformly and take advantage of the combined natural forces to bring oil and gas to the bore of the wells in the reservoir with the least practical waste.

The new, greatly reduced allowable total went into effect at 7 a.m., May 1, and is effective until further ordered. Permits granting added production above the stipulated amount for each well in the detailed field schedule may be granted at the discretion of the board, and then for a prescribed amount.

Aside from the importance of this order as regards the future of the field's production, the strengthening effect which it will afford the crude price structure is not be overlooked. With purchases of Shuler crude diminishing, sustained or increased production would have placed it in a weakened market position. The much-needed experimental pinching down of withdrawals for studying the mechanism of drive and flow, is also opportune economically at this time.

Special Train for A.P.I. Meeting At Wichita, Kansas, May 23-25

The Santa Fe railway company is arranging to operate special sleepers from Tulsa to Wichita, Kans., and return for the mid-year meeting of the American Petroleum Institute, May 23-25.

Train will leave Tulsa Sunday night, May 22, at 11:40 arriving at Wichita 8:35 a.m. May 23. Returning it will leave Wichita at 7:55 p.m. May 25, and arrive at Tulsa at 6 a.m. May 26.

California May Quota Is Set at 620,000 Barrels Daily

By L. P. STOCKMAN

LOS ANGELES, Calif., May 2.—The Central Committee of California Oil Producers has set the May quota at 620,000 bbls. per day and thus for the first time in several months failed to accept the estimate of demand announced by the Bureau of Mines.

The new quota is 78,700 bbls. lower than the daily quota during April, when, according to the Pacific Coast office of the American Petroleum Institute, 123,951 bbls. were added to stocks daily. Since January 1, 1938, crude and refined oil stocks have increased 14,329,379 bbls., exclusive of a substantial accumulation during April. As pointed out by R. K. Davis, vice president of Standard Oil Co., at the recent A.P.I. production meeting, this is greatly in excess of 50,000,000 bbls. annually.

In announcing the reduced quota, Lawrence Vander Leck, chairman of the central committee, frankly stated the curtailment body had become gravely concerned over the continued high rate of production, especially in certain fields. The committee is of opinion that unless the current rate of production from the state as a whole is reduced to somewhat approximating domestic demand and offshore requirements a collapse in prevailing stabilized conditions is inevitable.

Marketers are apprehensive about the possibility of Mexican crude and products reducing the offshore demand for California petroleum, as well as about the Japanese financial structure and recent discussions of a possible truce in China. American sellers dispose of crude and refined oil for money on the barrel head to Japanese buyers and are reluctant to grant credit due to recent developments.

May Allowable

The central committee, when setting the May quota, stipulated that crude production during that month must not exceed 620,000 bbls. daily, but it is doubtful it will be reduced to that objective due to chronic overages in several fields. During April the committee allocated 653,750 bbls. daily but was reduced to 615,865 bbls. daily in May after the committee reserved 4,135 bbls. per day to take care of new wells expected to be completed during the month. This represents a reduction of 37,885 bbls. in the allocation between fields for the two months. During March crude production averaged 723,913 bbls. per day and about 717,000 bbls. daily during April so that operators must reduce production approximately 100,000 bbls. per day to reach the May objective. This, at present, appears doubtful as it is the general expectation production during May will average around 650,000 bbls. per day even with a general tightening up. Much depends upon how much crude and products are moved offshore in May as this balancing factor may prove important. At present there does not appear much hope for substantially higher exports although the total annual amount should be higher than last year if military operations continue in China. The Bureau of Mines estimated the May demand at 667,800 bbls. per day, which is about 30,900 bbls. less than the estimate for April and the first large decrease from the previous month the bureau has forecast in almost two years of steady increases.

The chief problem confronting California marketers is to stimulate normal demand or find an additional outlet for fuel oil which, reflecting the recession, has been piling up at an alarming rate for several months. The demand for fuel oil and refinery residuum has reached the lowest point in recent years. Gasoline sales in California during March, the last date available, showed a sharp decline as the total gallonage for the month was 135,243,235 gallons. This is approximately 6.50 per cent below sales during March of last year. February was the only month to show a gain over sales for similar periods last year. Forecasts for 1938 indicated an anticipated increase of 4 per cent in gasoline sales and, while this may still be achieved, the losses recorded in the first quarter must obviously be made up later in the year.

A committee, Lawrence Vander Leck, J. R. Pemberton and W. H. Geis, was appointed to call upon purchasing companies and determine their attitude in reducing their takings of crude.

Illinois-Indiana Petroleum Conference Program

The program for the sixth annual Petroleum Conference of the Illinois-Indiana Petroleum Association to be held in Robinson, Ill., June 4, has been completed.

The morning session will be presided over by C. C. Carroll, manager of the Illinois division of the Ohio Oil Co. Registration will be from 9 a.m. to 10 a.m., with the balance of the morning devoted to the following papers: "Devonian-Silurian Section as an Oil Horizon in Southwest Indiana," Professor Ralph Esarey, geologist, Indiana State University; "Significance of New Discoveries in Illinois," Gail F. Moulton, geologist, New York; "Possible Producing Strata Below the McClosky," Dr. A. H. Bell, geologist and head of Oil and Gas Division, State Geological Survey, University of Illinois.

R. W. McIlvain, Jr., manager of the Illinois producing division, Pure Oil Co., will be chairman in charge of the afternoon session. "Electrical Exploration of Drill Holes," by Dr. E. F. Stratton, Illinois representative, Schlumberger Well Surveying Corp., will be the first paper in the afternoon. This will be followed by "The Economic Aspect of the Stripper Well Producer," C. F. Hobbs, superintendent, Big Four Oil & Gas Co. John H. Campbell, Illinois representative of Core Laboratories, Inc., will handle a paper on "The Science of Core Analyzing" and the final paper will be presented by R. E. Damp, production superintendent, Eastern division, Carter Oil Co., entitled "Operating Problems in the Illinois Basin."

The evening will be devoted to entertainment and speaking with W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, delivering the principal address, entitled "The Oil Industry."

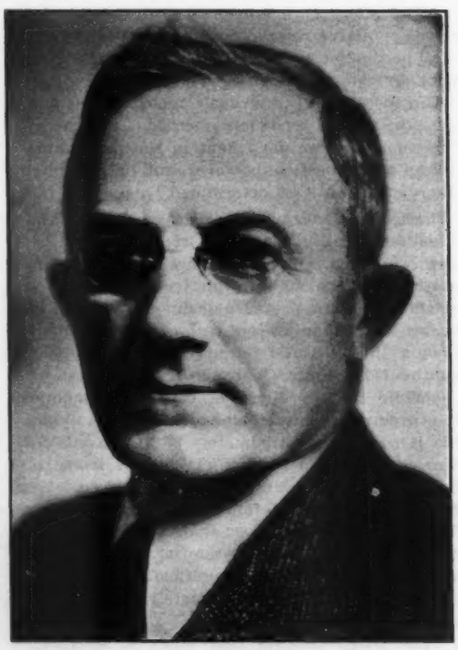
Next Texas Hearing

AUSTIN, Tex.—A statewide proration hearing for June was announced by Chairman C. V. Terrell of the railroad commission for May 17.

Refiners Present President Boggs With Two Valuable Paintings

The membership of the Western Petroleum Refiners Association in the final session of the annual meeting last week at Hot Springs, Ark., presented C. M. Boggs, its president over the past three years, with two companion paintings. The paintings by a well-known artist are landscape scenes admired by Mr. Boggs while on exhibition in Kansas City. Mr. Boggs has at his home in Arkansas City a highly prized collection of pictures.

Mr. Boggs was also reelected president of the association for the coming year. It was the first time in the history of the association a president was elected for a fourth term. All other officers of the association were reelected.



C. M. BOGGS

The directors authorized the preparation of a code for refinery inspection practice. The code will cover all distillation operations. The board also adopted a resolution commending the activities of the manufacturing committee which sponsored a technical program during the annual meeting and which also has carried on technical group meetings in several refining areas during the past year. Special tribute was paid to Emby Kaye, retiring chairman of the committee. Mr. Kaye is leaving the Mid-Continent area to engage in refining in the Rocky Mountain area.

The following officers and directors will serve the association during the coming year: President, C. M. Boggs, Kanotex Refining Co.; executive vice president, H. T. Ashton, Socony-Vacuum Oil Co. (Lubrite); vice presidents, R. W. McDowell, Mid-Continent Petroleum Corp.; Roy B. Jones, Panhandle Refining Co.; T. M. Martin, Lion Oil Refining Co.; secretary-treasurer, A. V. Bourque; assistant treasurer, Mary Sue Collins.

Board of directors, 1938-1939: C. M. Boggs, Kanotex Refining Co.; H. T. Ashton, Socony-Vacuum Oil Co. (Lubrite); Roy B. Jones, Panhandle Refining Co.; R. W. McDowell, Mid-Continent Petroleum Corp.; T. M. Martin, Lion Oil Refining Co.; C. W. Cahoon, Jr., Olney Oil & Refining Co.; H. W. Camp, Cities Service Oil Co.; Sheldon Clark, Sinclair Refining Co.; A. L. Derby, Derby Oil Co.; T. W. Eason, Eason Oil Co.; Alexander Fraser, Shell Petroleum Corp.; B. H. Gray, Atlas Oil Corp.; M. J. Grogan, Rodessa Oil & Refining Co.; D. P. Hamilton, Root Petroleum Co.; T. A. Helling, El Dorado Refining Co.; C. L. Henderson, Vickers Petroleum Co.; F. E. Holsten, Barnsdall Refining Corp.; A. M. Hughes, Phillips Petroleum Co.; R. R. Irwin, Socony-Vacuum Oil Co. (White Eagle); H. J. Kennedy, Continental Oil Co.; L. B. McCammon, Ohio Oil Co.; B. L. Majewski, Deep Rock Oil Corp.; F. L. Martin, Sunray Oil Co.; I. A. O'Shaughnessy, Globe Oil & Refining Co.; L. H. Prichard, Anderson-Prichard Oil Corp.; L. B. Simmons, Rock Island Refining Co.; W. G. Skelly, Skelly Oil Co.; C. S. Smith, National Refining Co.; J. W. Warner, Tide Water Oil Co.; C. B. Watson, Pure Oil Co.; R. A. Welch, Arkansas Fuel Oil Co.; Rex H. Winget, Cushing Refining & Gasoline Co. Ex officio director: W. D. Richardson, Cosden Oil Co.

the OIL AND GAS JOURNAL

PRODUCING REFINING NATURAL GASOLINE PIPE LINE

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Look Before Leaping

The threat of Governor Huxman of Kansas to throw his support behind federal control of the oil industry and divorcement of pipe lines if Kansas is not given a larger share of the market has several weaknesses.

Admittedly there is a large number of operators in Kansas, as well as in other states, suffering due to the efforts being made to maintain a balance between supply and demand, which so far has enabled the industry as a whole to prevent a collapse such as has come to other industries.

In the first place, the Kansas executive should investigate thoroughly before he jumps from the frying pan into the fire. What evidence has he that federal control will benefit those whose situation he seeks to improve?

The history of governmental control in this or in any other country has not led to the belief control of the oil business would be beneficial to the small operator. Governmental control invariably means monopoly. Official regulators soon discover they cannot handle an industry with thousands of operating units and the trend is always toward concentration. Pipe line divorcement would simply accentuate the conditions of which Governor Huxman complains.

In regard to the justice of his argument that operators in flush fields should be given a larger percentage of the total demand, there will be many who will agree with the executive committee of the Independent Petroleum Association of America that this is not a sound proration policy.

It must be remembered this is an industry where private companies must survive by their ability to make profits, not only on new investments but upon those made in the past. Pipe line companies have hundreds of millions invested in trunk and gathering systems connected to old producing areas. To force these companies to cease purchasing in those areas, in part or in whole, would be unfair to everyone directly concerned.

Over a period of time those areas now finding new oil will enlarge their market while those who are not finding new reserves will see their current output diminish. The Bureau of Mines estimates of demand for several years has reflected that situation.

The system of proration through state conservation bodies and the Interstate Oil Compact is the democratic method for solving the problems of the industry, the democratic principle which Governor Huxman says he favors. Its basic idea is that the individual states must observe a give and take attitude.

There never has been a time in the history of proration when one state, if it so desired, could not have nullified the efforts of all the other states. That is the situation now. Its solution calls for further cooperation.

The proposed reallocation of markets is not a simple matter. It involves a major readjustment in the arrangements for production, transportation and refining. Unwarranted action at this time would not only unsettle the entire industry but in the end would prove a boomerang to those it was supposed to help.

When existing flush fields become old their position will be the same. The margin of profit in some of the old areas is very small and to curtail them drastically to provide outlets for new fields is no answer to the industry's present troubles.

These and many other problems of the industry demand further consideration as to whether proposed remedies are feasible, but they must be approached with appreciation of what has been accomplished by the cooperative action of the industry over several years, and not under threat of nullifying everything that has been done.

Administration Antitrust Policy Is Outlined

WASHINGTON, D. C., May 2.—A definite antitrust policy and an itemized outline of the course of future business legislation were revealed by the administration this week, and at the same time President Roosevelt publicly asked for closer cooperation between business and government to stabilize industry.

The antitrust policy was outlined in a speech in New York by Thurman Arnold, assistant attorney general in charge of the antitrust division, in which he proposed a vigorous enforcement of the laws as they now stand, but on a selective basis and with full publicity so business may know what the Department of Justice is attempting to achieve in its investigations and prosecutions.

The pattern for future legislation was given to congress in the monopoly message which President Roosevelt had promised many months ago, but instead of asking for immediate legislation he proposed an appropriation of $500,000 for a comprehensive study of business practices and regulations to be conducted by the Department of Justice, Federal Trade Commission, Securities and Exchange Commission, and other federal agencies. The president suggested seven lines of investigation in such detail as to leave little doubt as to the conclusions he hopes the investigators will reach.

The gesture of cooperation with business was brought about through Commissioner John W. Hanes, the "Wall Street" member of the Securities and Exchange Commission, who submitted to President Roosevelt a statement signed by 16 prominent business executives pledging themselves to aid the president in restoring confidence and normal business conditions through consultation and cooperation. In reply, the president asked Commissioner Hanes to request business men either individually or in groups to submit specific suggestions which will bring closer cooperation between business and government and which will encourage business men to take the initiative to stabilize their industry.

Bigness in business was criticized by the president throughout his message, but not without discrimination. He declared we all want efficient industrial growth and the advantages of mass production, but that efficient mass production is not furthered by a central control which destroys competition between industrial plants, and industrial efficiency does not have to mean industrial empire building. He declared business enterprise needs new vitality and defended the right of well-managed small business to expect to make reasonable profits.

He also recognized that "competition, like all other good things, can be carried to excess," and he gave indirect support to the oil proration system when he said: "In gauging the market for their wares, business men, like the farmer, should be given all possible information by the government and by their own associations so that they may act with knowledge and not on impulse. Serious problems of temporary overproduction can and should be avoided by disseminating information that will discourage the production of more goods than the current markets can possibly absorb or the accumulation of dangerously large inventories for which there is no obvious need."

As an immediate step, the president recommended an increase of $200,000 in the appropriation of the Department of Justice for enforcement of the antitrust laws and specifically endorsed the policy of Thurman Arnold in directing enforcement against practical effects instead of intent to violate the laws.

The president declared there should be an examination of the existing price system and price policies of industry to determine their effect upon the general level of trade, upon employment, upon long-term profits, and upon consumption. Some had expected the president might ask for a definite reexamination of the Miller-Tydings price maintenance act and other recent merchandising legislation, state and federal.

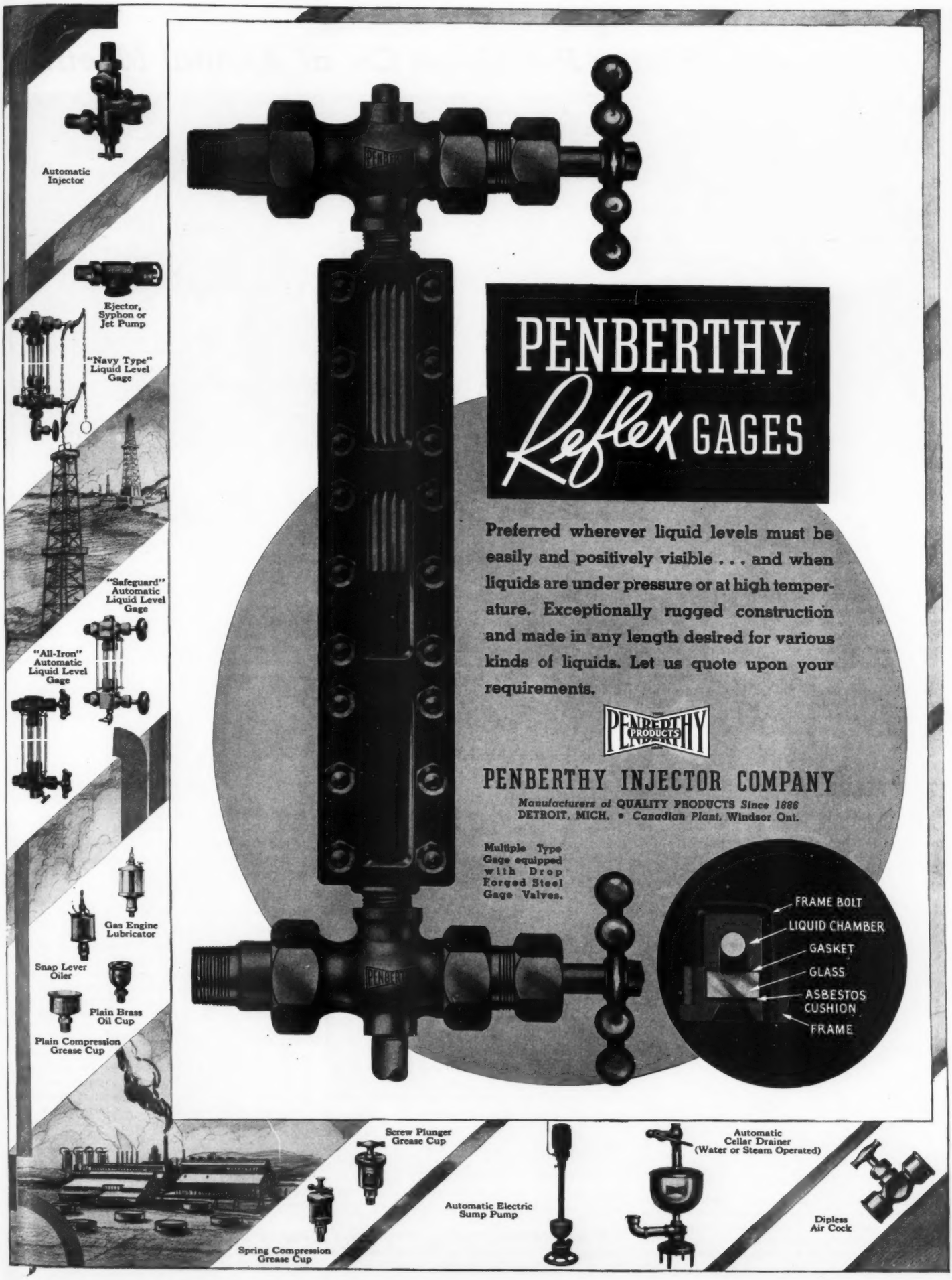
Improvement of antitrust procedure was the first study problem listed by the president, and he suggested shifting the burden of proof from the government to persons charged with violations, declaring, "Proof by the government of identical bids, uniform price increases, price leadership, higher domestic than export prices, or other specific price rigidities might be accepted as prima facie evidence of unlawful actions." On the other hand, he recommended remedial legislation to permit industries to engage in legitimate cooperative efforts to eliminate socially and economically harmful methods of competition without fear of possible technical violations of the antitrust laws. Possibly the history of the Madison oil case was the background for this suggestion.

Other proposals in the message were studies of more rigid scrutiny of mergers and interlocking corporations; the control exercised over industry by financial institutions; regulation of investment trusts to prevent them from dominating industry; and regulation of bank holding companies. As to trade associations, the president recommended supervision and publicity accompanied by a clarification and delineation of their legitimate spheres of activity which will enable them to combat unfair methods of competition. Patent laws, he said, should be revised to prevent the suppression of invention, and he commended the operation of open patent pools used by a number of industries.

The use of the tax laws to destroy bigness in business, or as he phrased it, "to make bigness demonstrate its alleged superior efficiency," was strongly urged by the president, who took the occasion to defend the principle of the undistributed profits tax and a graduated tax on corporation income.

The seventh specific suggestion was the creation of a Bureau of Industrial Economics, long advocated by the Department of Commerce and by many business men, as an agency to study trade fluctuations and business conditions in order to stabilize industry and advise business men on production and price trends and policies.

"This program," the president concluded, "is not intended as the beginning of any ill-considered 'trust busting' activity which lacks proper consideration for economic results. It is a program to preserve private enterprise for profit by keeping it free enough to be able to utilize all our resources of capital and labor at a profit."


Automatic Injector
Ejector, Syphon or Jet Pump
"Navy Type" Liquid Level Gage
"Safeguard" Automatic Liquid Level Gage
"All-Iron" Automatic Liquid Level Gage
Gas Engine Lubricator
Snap Lever Oiler
Plain Brass Oil Cup
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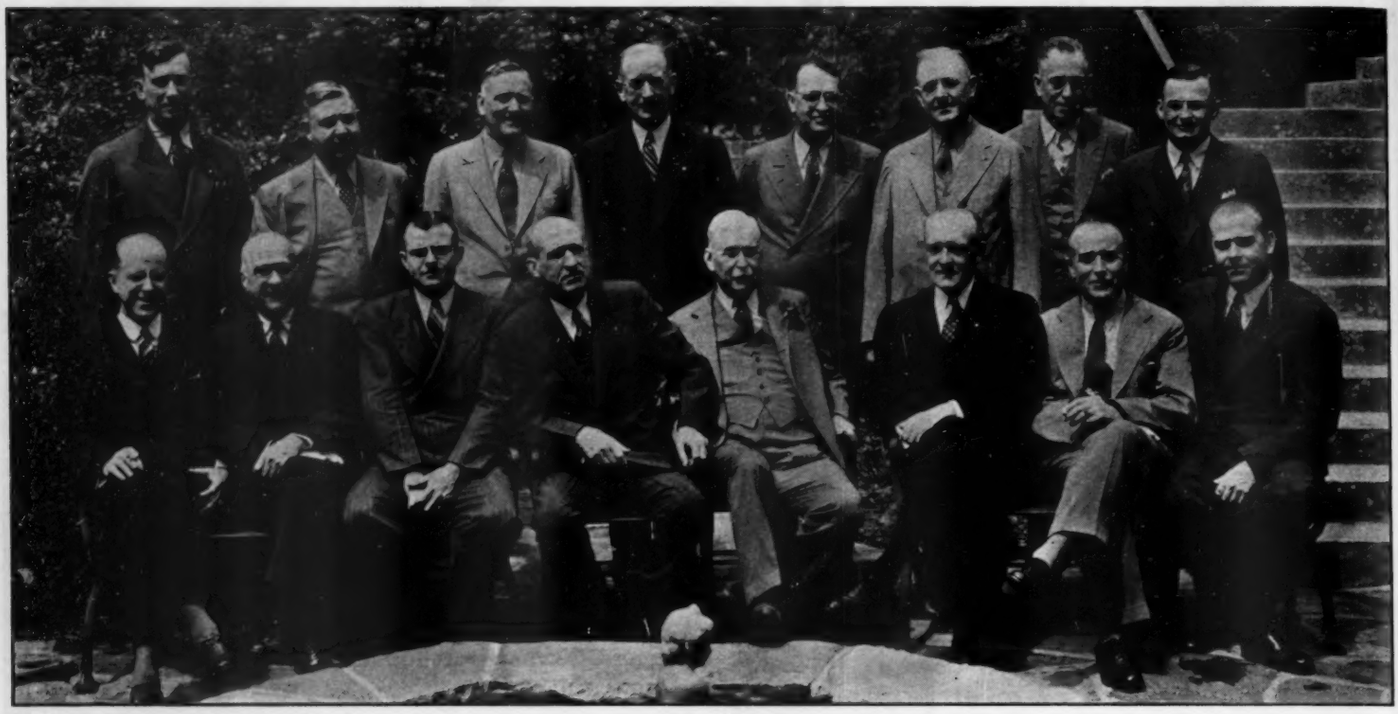
Directors of Phillips Petroleum Co. at Annual Meeting



Standing: G. G. Oberfell, vice president research department; W. C. Smoot, president, First National Bank, Bartlesville; F. E. Rice, vice president natural gasoline department; H. E. Koopman, vice president purchasing department; C. P. Dimit, vice president production department; A. M. Hughes, vice president sales department; M. P. Youker, vice president, refining department, and Don Emery, vice president and general counsel. Seated: H. M. Addinsell, chairman of executive committee, First Boston Corp., New York; Charles A. Lemp, investments, St. Louis; K. S. Adams, president, Phillips Petroleum Co.; Frank Phillips, chairman of board, Phillips Petroleum Co.; E. P. Earle, president, Nipissing Mines Co., Ltd., New York; J. L. Johnston, president, Lambert Co., New York; Eugene E. duPont, director E. I. duPont de Nemours, Wilmington, Del., and A. S. Woods, vice president, John and Mary Markle Foundation, New York.

At the annual stockholders meeting of Phillips Petroleum Co. held at Bartlesville, Okla., April 26, all directors were reelected and the following new directors were elected to fill vacancies: C. P. Dimit, A. M. Hughes, F. E. Rice and M. P. Youker.

Frank Phillips, for 21 years the chief executive of the company, has held the offices of chairman of the board and president. Upon recommendation of Mr. Phillips, K. S. Adams was elected president. This change will not affect the management of the company as Mr. Phillips will continue as the senior officer. Mr. Adams, as executive vice president, has been the operating manager, and will continue in the same capacity as president.

Other advances were C. O. Stark, A. H. Riney, and R. C. Jopling who were elected vice presidents; T. V. Stevens, assistant treasurer and J. F. Kinslow, assistant secretary.

THE MARKETS*

CRUDE OIL: *Additional proration at scattered points by pipe line companies and lower nominations reflect the fact there will be less demand for crude in May than in any previous month this year. This is largely due to the desire of companies to reduce excess stocks of finished products. Small quantities of crude under the market are reported in small producing areas where pipe line purchases have been curtailed or dropped entirely.*

REFINERY: *The situation in regard to gasoline is mixed. Some areas report better movement at firm or higher prices, while others are disappointed with shipments and price trends. Tractor fuels strong. The spring improvement in demand for industrial fuels has failed to materialize and heavy oils continue weak.*

TANK WAGON AND POSTED DEALER: *While posted gasoline schedules are holding fairly firm, there is considerable complaint regarding special concessions, particularly in commercial accounts.*

FINANCIAL: *Several oil stocks have dropped below 1935 levels, despite favorable earning reports for first quarter. Average of 30 stocks for week ending April 30: High, 27.48; low, 25.91; close, 25.88. Week ending April 23: High, 28.33; low, 26.47; close, 27.75.*

ANNUAL REPORTS

SOCONY-VACUUM OIL CO., INC. *reported for 1937, net income after all charges of $56,808,264 equivalent to $1.32 per common share, compared with net income of $42,909,362 or $1.38 per share in 1936.*

GULF OIL CORP. *reported for 1937, net income of $31,854,065 or $3.51 per share compared with $26,356,003 or $2.90 per share in 1936. Net income in 1936 included nonrecurring profit of $5,474,355.*

FIRST QUARTER REPORTS

PHILLIPS PETROLEUM CO. *reported for the quarter ended March 31, 1938, net income of $2,314,642 or 52 cents per share compared with $5,615,637 or $1.26 per share in the first quarter of 1937.*

SKELLY OIL CO. *reported for the first quarter ended March 31, 1938, net income of $664,770 or 56 cents per share compared with $1,534,413 or $1.43 per share in the first quarter of 1937.*

At the annual meeting of TEXAS CORP., *Chairman T. Rieber stated earnings in the first quarter of this year were approximately 56 cents per share compared with $1 per share for the first three months of 1937.*

Obituaries

ADAM B. COOK, 70, long-time driller and producer, died last week in Pittsburgh, Pa. He was born in Parker's Landing.

L. E. CRESS, 50, Wichita, Kans., oil operator, was killed when the automobile in which he was riding collided with a truck near Aldron, Ark.

EUGENE MOYNIHAN, 63, tankage superintendent for Stanolind Pipe Line Co., died last week in Ranger, Tex. Born in Pennsylvania, he had been a tank man in the Mid-Continent since 1915. He was employed by Sinclair Oil Co. for several years before joining Stanolind Pipe Line Co. eight years ago.

FLOYD N. JONDAHL, 49, secretary of Producers Oil Co. of Kansas, died last week of a heart ailment in a Wichita, Kans., hospital.

Canadian Gasoline Sales Increased in February

OTTAWA, Ontario.—Figures of Canadian gasoline sales in January, 1938, show declines in Prince Edward Island, Quebec and Ontario in comparison with the same month last year, while Manitoba, Saskatchewan, Alberta and British Columbia all showed increase, with a considerable net gain all told. New Brunswick and Nova Scotia did not report.

Imports into Canada of natural gasoline in February totaled 5,215,152 gallons valued at $306,779 compared with 2,819,270 gallons valued at $164,150 in January. Of the February imports 2,729,848 gallons worth $192,617 came from the United States against 366,085 gallons worth $19,163 in January; the remainder in both months came from Peru. Imports of gasoline lighter than .8235 gravity, all from the United States, amounted to 1,183,549 gallons valued at $100,498 in February compared with 1,461,066 gallons worth $122,532 in January. Exports of gasoline and naphtha from Canada dropped from 43,900 gallons in January to 8,832 gallons in February.

Regular Indiana Dividend

Directors of Standard Oil Co. of Indiana declared a regular dividend of 25 cents.

The characteristic of this special filter paper to burn without ash deposit, enables the capture of pure silicon out of steel.

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BUILDING LIFE INTO WICKWIRE ROPE "BEYOND SPECIFICATIONS" . . . . .

It is still the privilege of the progressive manufacturer to build rope life into his product beyond official specifications.

In making silicon determination in the Wickwire Spencer Laboratories, an accurately weighed sample of metal is totally dissolved. Silicon is then chemically precipitated in the solution into minute suspended particles which are captured in the meshes of a special filter paper. Then the paper is burned away from the silicon it holds in an electric furnace. The residue is weighed to determine the percentage of silicon that was present in the steel. The exacting care of innumerable such tests gives you that extra life you get from Wickwire Rope.

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General Offices: 41 East 42nd Street, New York City; Sales Offices and Warehouses: Worcester, New York, Chicago, Buffalo, San Francisco, Los Angeles; Export Sales Dept.: New York City. Wickwire Spencer Sales Corporation, New York, Chattanooga, Tulsa, Abilene, Texas, Portland, Seattle.

Natural Gasoline

Interesting Program Planned For May C.N.G.A. Meeting

LOS ANGELES, Calif.—The California Natural Gasoline Association will hold its final program of the fiscal year on May 5, and as a grand windup to a highly successful term, has prepared a program of a somewhat unique type for the occasion. The speaker of the evening, Robert B. Bowman, research and development department, Standard Oil Co. of California, will present a paper entitled "Equilibrium Relations for Paraffin Hydrocarbons at High Pressures and Ordinary Temperatures." Bowman will present developed data on hydrocarbon equilibria that are of vital significance in almost every phase of the natural gas and gasoline business, and are of equal importance in field and refinery engineering.

Robert B. Bowman is recognized as an authority on the subject, and his address promises one of the liveliest sessions of the year, particularly since prepared discussions will be interjected by Dr. W. N. Lacey, California Institute of Technology, and E. G. Ragatz, Union Oil Co., both of whom will attempt to develop every possible angle of the topic of interest to the members.

Automotive Industry to Take Part in N.G.A.A. Meeting

The automotive industry will again take a leading part in the annual convention of the Natural Gasoline Association of America, when representatives of that industry present their discussions in the meetings scheduled for May 11 to 13, at the Hotel Tulsa, Tulsa.

A joint paper on "Road Test Methods and Results From the Standpoint of the Automotive Industry" by Wheeler G. Lovell, J. M. Campbell and M. J. Mulligan, research laboratory division, General Motors Corp., Detroit, is to be a feature of the technical session of May 12. This paper will be in the nature of a discussion of the paper by T. W. Legatski, Phillips Petroleum Co., Bartlesville, Okla., on "The Fuel System Characteristics of Vapor Locking Automobiles as Determined by the Pawhuska Road Tests in 1937." Legatski served as chairman of the steering committee for these tests which were a joint project of the Natural Gasoline Association and Western Petroleum Refiners Association. His paper is the final report of that committee. Other automotive men who have been invited to present discussions are E. H. Shepard, Chevrolet Motor Co., Detroit; Frank Mock, Bendix Corp., and W. S. James, the Studebaker Corp., both of South Bend, Ind.

Another technical session is devoted to the discussion of economics within the industry and the subject is approached from two angles. R. C. Alden, research director of Phillips Petroleum Co., is to present a paper on natural gasoline marketing with particular reference to sale on the inherent value of natural gasoline rather than selling just to get the material into the market. Arch L. Foster, National Petroleum News, Cleveland, Ohio, will discuss the "Trends in Refining Processes and Their Effect on Natural Gasoline Operations." Both of these papers will be discussed from the floor, the latter by C. R. Williams, Continental Oil Co., Ponca City, and the former by Mark Patten, Hurley Gasoline Sales Co., Tulsa.

The convention will be officially opened Wednesday afternoon, May 11, with an address by J. W. Newton, vice president in charge of refineries, Magnolia Petroleum Co., Dallas. Mr. Newton has a wide knowledge of natural gasoline operations and their relation to the refining industry. J. A. LaFortune, vice president of Warren Petroleum Corp., Tulsa, and president of the association, will deliver his annual address at this same session and will be followed by the annual reports of the various committees. In view of the large amount of work done by these groups, their reports will be of unusual interest to the industry.

Friday morning, May 13, is given over entirely to discussion of field operating problems when field and laboratory men compete for cash prizes in the presentation of the most valuable original ideas for the simplification of their own particular work. Entries in this session already indicate that it will be the largest and most successful yet attempted. F. E. Fisher, Skelly Oil Co., Burbank, Okla., is to be in charge of this meeting and will be assisted by a committee of judges who will select the most valuable contributions.

Immediately following this session registrants at the convention will be special guests of the management of the International Petroleum Exposition where they will be given a prevue of the exhibits. A barbecue dinner will be served in the new cafeteria building that evening when natural gasoline men will be the guests of Warren Petroleum Corp. Admission to both events will be by ticket only.

Wednesday, May 11

10:00 a.m.—Registration. Meeting of the board of directors.

2:00 p.m.—Opening session.

Address: J. W. Newton, vice president Magnolia Petroleum Co., Beaumont, Tex.

President's address: J. A. LaFortune, Warren Petroleum Corp., Tulsa, Okla.

Committee reports: Gas contract committee; chairman, J. W. Cowles, Shell Petroleum Corp. Technical committee: Chairman, H. W. Harts, Warren Petroleum Corp. Gas testing committee: Chairman, A. W. Dwen, J. E. Crosbie, Inc. Specifications committee: Chairman, S. B. Crooks, Cities Service Oil Co.

Thursday, May 12

10:00 a.m.—Technical session: Ray E. Miller, Hanlon-Buchanan, Inc., presiding.

Paper: "Trends in Refining Processes and Their Effect on Natural Gasoline Operations," Arch L. Foster, National Petroleum News, Cleveland, Ohio.

Discussion: C. R. Williams, Continental Oil Co., Ponca City, Okla.

Paper: "Recent Improvements in Natural Gasoline Manufacture," by H. H. Beeson, Sabine Valley Gasoline Co., Shreveport, La.

Paper: "Marketing Natural Gasoline on a Basis of Its Inherent Qualities," R. C. Alden, Phillips Petroleum Co., Bartlesville.

Discussion: Mark Patton, Hurley Gasoline Sales Co., Tulsa.

2:00 p.m.—Technical session.

Paper: "The Fuel System Characteristics of Vapor Locking Automobiles as Determined in the Pawhuska Road Tests of 1937," T. W. Legatski, Phillips Petroleum Co.

Paper: "Discussion of Road Test Methods and Results From the Standpoint of the Automotive Industry," Wheeler G. Lovell, J. M. Campbell and M. J. Mulligan, Research Laboratory Division, General Motors Corp., Detroit, Mich.

Presentation of Hanlon Award, President J. A. LaFortune.

Friday, May 13

10:00 a.m.—Operating "Kinks" Session—F. E. Fisher, Skelly Oil Co., chairman.

Round table discussion for field men.

Shamrock Planning Southwest Texas Gasoline Plant

HOUSTON, Tex.—Construction of a natural gasoline plant and a natural gas recycling plant in Hidalgo County may be undertaken by Shamrock Oil & Gas Co. of Amarillo, if engineering tests to be made shortly prove satisfactory, according to John Sherrin, president.

A preliminary survey was made of the La Blanca field, and other fields in the Lower Rio Grande Valley will be inspected this week.

Texas Commission to Consider New Natural Gas Regulations

AUSTIN, Tex.—The Railroad Commission of Texas on May 17, in its hearing room in the State Capitol, will take up for consideration the operation of gasoline plants in Texas for the purpose of determining whether or not additional rules and regulations or orders should be adopted, or whether or not existing rules and regulations or orders should be amended, and whether reports presently required be revised in order to secure more detailed information in the interest of conservation of natural gas and the prevention of waste. At this hearing the commission will consider testimony on the following questions:

1. The advisability of requiring a master meter to record the intake volume of gas at all gasoline plants in the State of Texas.

2. The advisability of requiring metered volumes for all disposals of residue gas.

3. A proposed revision of gasoline plant reports presently required by the commission in order to describe in greater detail and with increased accuracy the volume and type of product recovered from the gas processed and the disposition made of the residue gas.

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DISCOVERER, OWNER, OPERATOR, MARKETER,
ROUSTABOUT AND CHEERFUL SACK-HOLDER of the WHOLE
KOBLITZ POOL.

This sign was placed on the discovery lease in the Koblitz pool, Ellis County, Kansas, nearly one and one-half years after the discovery well was completed for 220 bbls. of oil, naturally, in Arbuckle lime. When Ted Kors, Wichita operator and discoverer of the pool, failed to get a connection from a pipe line 1½ miles distant, he took this method of disposing of his oil. Part of the output is trucked to the United refinery, at Russell.

Refinery Expansion

New Canadian Company Planning Refinery for Turner Valley Field

CALGARY, Alberta.—National Refineries, Ltd., has been incorporated under Alberta charter with capitalization of $20,000. The project is sponsored by interests associated with National Petroleum Corp., which has one producing well and a second nearing completion in the Turner Valley crude area, and will provide a refining outlet for that company's crude.

Southwest Texas Refinery Placed in Operation

LULING, Tex.—The new plant of the Dale Oil & Refining Co. located at Dale, Tex., has started operations, processing crude oil from the Buchanan field and northern Caldwell County area. The refinery will manufacture a high octane gasoline, "light-house" kerosene, furnace oils and bunker fuel oil. R. Ranne, San Antonio, is president of the company; Fred Tolleson, sales manager, and R. E. Goode is in charge of refining.

East Texas Refinery Being Revamped Before Reopening

FORT WORTH, Tex.—Refinery equipment last operated several months ago as the Trinity Refinery in Gladewater is being reconditioned for operating by the Louisiana Iron & Supply Co. The company purchased the plant following receivership over unpaid claims for both state and federal taxes. Negotiations for the purchase were closed between the present owner and David Donohue of Fort Worth, receiver, according to S. Y. Dorfman, president of Louisiana Iron. The plant is of about 3,000 bbls. capacity.

Pure Oil Co.'s Muskogee Refinery Reopened

Pure Oil Co.'s refinery at Muskogee, Okla., which has been shut down for the past few months as new equipment was installed, resumed operations this week. Operations will be started on a reduced scale according to George T. Yost, plant superintendent.

Construction Started on New Spokane, Wash., Refinery

SPOKANE, Wash.—Work on the Inland Empire Refineries, Inc., refinery here was started this week, it was announced by Emby Kaye, general manager of the company and of its affiliate, the Idaho Refining Co. Location of the Spokane plant will be north of the Hillyard area, and the refinery will be about 2,500 bbls. daily capacity. The company plans to erect storage of about 1,000,000 bbls. at the refinery site.

Texas Corp. Takes Interest In McColl-Frontenac

TORONTO, Ontario.—Announcement is made that the Texas Corp. has acquired a substantial interest in the McColl-Frontenac Oil Co. of Toronto and Montreal, estimated at approximately 35 per cent of the capital stock. Negotiations are now in progress for representation of the Texaco interests in the McColl-Frontenac directorate, when the annual meeting is held on May 26.

McColl-Frontenac Oil Co. some years ago merged McColl Bros. Oil Co. of Toronto and Frontenac Oil Co. of Montreal to form what became one of the major oil refining and marketing organizations in Canada. Since the merger, refining facilities at Toronto and Montreal have been expanded, and the company's marketing facilities throughout Eastern Canada increased. It recently acquired control of the Perfection Petroleum Co. with 35 stations, of which 24 are in Toronto.

The company has also, through Antilles Petroleum Co., (Trinidad) Ltd., a Trinidad corporation, carried on extensive development work in the Trinidad field. Production for 1937 was 499,722 bbls., a daily average of 1,369 bbls. Other subsidiaries include McColl Bros., Inc., of Buffalo and Frontenac Pipe Line Co. (Texas). For the year ending January 31, 1938, the operating profit was $3,455,343 compared with $2,426,455 the previous year; and the earned surplus $3,346,055 against $2,985,728. Total assets increased from $35,013,677 to $37,921,418.

Natural Gas

Natural Gas Department A.G.A. Ready for New Orleans Meeting

The annual convention of the Natural Gas Department of the American Gas Association will open at New Orleans May 9 continuing four days. The program was published on page 25 of the April 7 issue of The Oil and Gas Journal. The sessions will be presided over by Robert W. Hendee, chairman of the department and Thomas R. Weymouth, vice chairman.

New York-Pennsylvania Gas Wells Reach Pay Formation

New York State Natural Gas Co.'s test on the C. D. Carr farm in West Union Township, Steuben County, reached the Oriskany at 5,155 feet. It was reported still drilling at 5,183 feet, 28 feet below the top of the sand, at the end of the week. It gauged 521,000 feet initially with an initial rock pressure of 1,620 pounds.

This company's test on the Park Estate farm in Woodhull Township, Steuben County, also topped the Oriskany in the past week, topping this formation at 3,835 feet. Top of the Onondaga was at 3,803 feet. It is shut down for casing at 3,836½ feet, 1½ feet in the sand, where the first show of gas, gauging 100,000 feet, was encountered.

Southwestern Gas Measurement Short Course at Norman

The fourteenth annual Gas Measurement Short Course held at the University of Oklahoma, Norman, April 19-21, was proclaimed by all attending as the most successful yet conducted, the enrollment figure being about 700, 500 men of the industry and the rest students in the engineering classes. There were representatives from Washington, D. C., Mexico and 27 states.

The principal address was made by R. W. Hendee, Colorado Interstate Gas Co. The report of the committee on "Study of Practical Methods" was made by Earl Kightlinger, Arkansas-Louisiana Gas Co., Shreveport, La.

Each afternoon during the school 18 classroom papers were presented by authors selected from the University faculty, the manufacturers' personnel and men of the industry. The interest in the subjects was manifested by the numerous discussions following each paper.

Two constructive papers were presented before the general assembly: "Fundamental Principles of Orifice Meters," by A. D. McLean, Pittsburgh Equitable Meter Co., and "Fundamental Principles of Displacement Meters," by A. F. Benson, American Meter Co.

J. H. Page, of the Kansas Corporation Commission, presented a paper on "The Major Gas Fields and Reserves of Kansas," and Dr. R. L. Huntington, of the University of Oklahoma faculty, a paper on "Chemical Analysis of Gases."

L. G. Rheinberger, Sinclair-Prairie Oil Co., Tulsa, the newly elected chairman of the general committee, was installed in office and given an inlaid walnut box containing a rosewood gavel by the retiring chairman, Gilbert Estill, Oklahoma Natural Gas Co., Tulsa.

The winners of the prize paper on "What I Learned at the Gas Measurement Short Course" were:

First prize, $15, J. M. Howard, Kansas Power & Light Co., Salina, Kans.

Second prize, $10, L. J. Sims, Arkansas-Louisiana Gas Co., Shreveport, La.

Third prize, $5, B. K. Golson, Lone Star Gas Co., Shamrock, Tex.

Third prize, $5, Helmer Sheline, Oklahoma Natural Gas Co., Iola, Kans.

Third prize, $5, J. F. Steckelberg, Arkansas-Louisiana Gas Co., Shreveport, La.

Third prize, $5, Sibyl McKay, Victor Gasoline Co., Tulsa.

Third prize, $5, H. E. Holling, Keystone Steel & Wire Co., Peoria, Ill.

The bulletin of the proceedings of this year's course will be printed under the direction of G. W. McCullough, Phillips Petroleum Co., Bartlesville, Okla., chairman of publications committee.

W. H. Carson, dean of the College of Engineering, University of Oklahoma, was reelected secretary and treasurer.

Pipe Line News

Supreme Court Upholds Kentucky Pipe Line Order

WASHINGTON, D. C., May 2.—The Supreme Court upheld lower federal court in refusing to enjoin Kentucky Public Service Commission from enforcing a rate investigation order against Petroleum Exploration, Inc., operating a gas pipe line system.

The court also upheld a Louisiana statute requiring prompt payment for oil taken from leased land, which was challenged by Arkansas Fuel Oil Co. on ground that failure to establish true owner of oil might require double payment.

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AT TULSA....

IN BOOTH Nos. 89, 90, 121, 122—KEROTEST will present a dramatic presentation of the GRAY-KEROTEST SYSTEM of WELL CONTROL...This will be one of the most interesting and original exhibits at the EXPOSITION... Be sure to drop in and see it... You will find it exceedingly worth while... KEROTEST MANUFACTURING COMPANY, Pittsburgh

KEROTEST

Scouts Meet in Tulsa on Eve of International Oil Exposition

Chief scouts, assistants and field men from all sections of the Mid-Continent and Gulf coastal areas will assemble in Tulsa May 12 for the three-day convention of the National Oil Scouts Association of America, one of two major events to precede opening of the International Petroleum Exposition to be held in Tulsa May 14 to 21.

The other pre-exposition event of major importance will be the annual meeting of the Natural Gasoline Association of America, May 11 to 13.

This will be the fifteenth annual meeting of the scouts' association and the first to be held in Tulsa in many years. Convention headquarters will be at the Mayo Hotel in downtown Tulsa, with business sessions being held there. Several entertainment features will be held elsewhere.

Opening of the convention is scheduled for noon, May 12, when registrations will begin. No group sessions will be held that day.

Discussions of various phases of the petroleum industry pertinent to scouting will feature business sessions.

The first of these will open at 9:30 a.m. May 13. After an address of welcome by Mayor T. A. Penney of Tulsa and response by Howard Boyd, association president, the first technical paper will be presented by Ed Koester, geologist, of Wichita, Kans. He will discuss "Geology and Oil Developments of Western Kansas." This will be followed with a paper on "Sidewall Surveying and Other New Methods of Logging Oil Wells," by R. G. Hamilton of Oklahoma City.

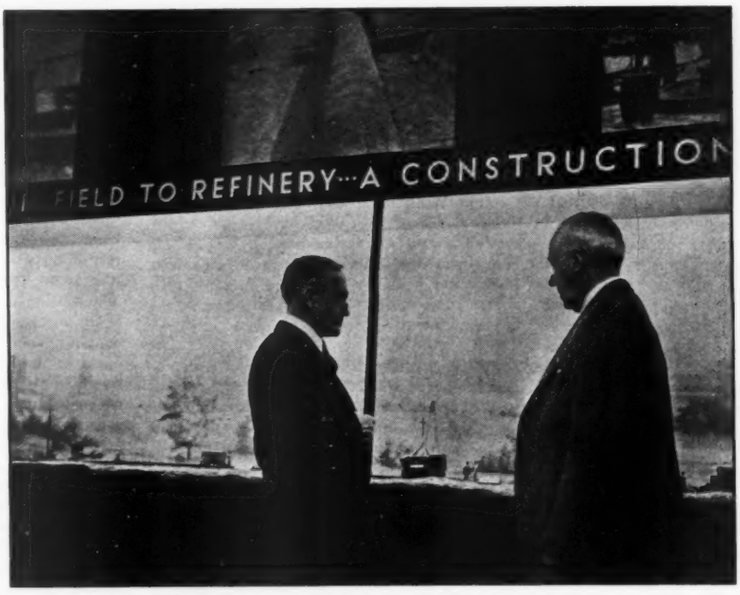
The next business session will be held on the morning of May 14, when Gen. Baird H. Markham, of New York, director of the American petroleum industries committee, will speak on "Oil Taxation," and W. A. Delaney, Jr., independent oil producer of Ada, Okla., will discuss "Development of Conservation and Well Spacing Laws of Oklahoma." Election of officers and completion of other association business will follow presentation of these papers.

Visiting ladies will be entertained at a bridge luncheon at noon, May 13, and at 12:30 p.m. that day the association's annual golf tournament will begin at Oakhurst Country Club. This is the course on which the Women's Trans-Mississippi Tournament will be played in June.

At 1:30 p.m. that day scouts who are not participating in the tournament will visit the International Petroleum Exposition grounds for a preview of the oil show, to open the next day. At 4 p.m. the visiting ladies again will be entertained, this time at the University Club.

The International Exposition again will attract the scouts the night of May 13. They will assemble at convention headquarters and be taken in busses to the exposition grounds, where a buffet supper for both men and women will be served in the main dining room. A musical program will follow, and the scouts then will go on a night tour of the grounds, the buildings and exhibits being open for their inspection.

No convention events are scheduled for the afternoon of May 14, but the annual dinner dance will be held at 8 p.m. in the Mayo Hotel. Last event on the convention program will be awarding of golf trophies and bridge prizes at 11 p.m., during the dance.



Dr. Gustav Egloff of Universal Oil Products Corp., and Dr. C. K. Francis of The Oil and Gas Journal, chairman and vice chairman of the scientific and technical committee, inspect dioramas illustrating the oil industry in the Hall of Science, International Petroleum Exposition

Officers of the National Oil Scouts Association are: Howard Boyd, Magnolia Petroleum Co., Dallas, president; Harry Leyendecker, Tide Water Associated Oil Co., Houston, first vice president; Edgar R. Neath, Humble Pipe Line Co., Longview, Tex., second vice president; Lonnie Huddleston, Shell Petroleum Corp., Wichita Falls, secretary-treasurer, and Lee A. Adams, Sinclair Prairie Oil Co., Oklahoma City, chairman of the executive committee.

W. S. Arthurs, Skelly Oil Co., Tulsa, is chairman of the general arrangements committee directing preparations for the convention. Other members of the committee include R. C. Steinman, Sinclair Prairie Oil Co.; Henry Langspecht, independent operator; H. T. Carpenter, Ohio Oil Co.; R. B. Curran, Carter Oil Co.; Clyde Beebe, Shell Petroleum Corp., and T. H. Shaw, Sinclair Prairie Oil Co., all of Tulsa.

The scouts, in common with thousands of others expected to attend the oil show, will find that the 1938 exposition will surpass all previous expositions in number and variety of exhibits, in technical and scientific displays, in size of grounds and buildings and in many other respects.

Although exhibit space is 50 per cent larger this year than at previous expositions, all outdoor space and all but four inside booths had been taken by exhibitors by the first of this week. The four inside booths originally had been reserved, but were released when the exhibitor decided to move his display to an outside location. It was expected they would be taken before opening of the show.

Value of the machinery and other materials to be displayed at the oil show is estimated at $10,000,000 by W. B. Way, general manager of the exposition. This includes the $250,000 scientific and technical equipment loaned the exposition by the Chicago Museum of Science and Industry. It will be on display in the Hall of Science throughout the exposition, and undoubtedly will be one of the major attractions of the oil show. Commercial exhibits will include those of 402 companies featuring drilling and production, 317 featuring transportation, 303 featuring refining, and 208 featuring marketing. These exhibits will represent every phase of the petroleum industry, from the finding of crude oil and gas to the marketing of the refined products.

Although the International Petroleum Exposition primarily is an industrial and commercial show, it is not without entertainment features.

A highlight will be the entertainment of oldtimers and pioneers of the industry, with selection of one of the veterans as "Grand Old Man of the Petroleum Industry," one as "Grand Old Man of Tulsa," and one as "Pioneer of Pioneers." The replica of the Drake well will be headquarters and a resting place for the oldtimers who attend the exposition. A memorial dedication and special program for the old men will be held on the grounds at 3 p.m., May 15. The pioneers also will be entertained at a party given by private citizens.

L. B. Jackson, first president of the exposition, and a committee were planning a special dinner program observing the fifteenth anniversary of the oil show.

The Oil Show Rodeo is expected to be one of the more popular side attractions of the exposition. It is to be held each evening from May 16 to May 21.

The Junior Chamber of Commerce will entertain young oil men with a party and refinery tour.

The exposition golf tournament will be held during the week, with the finals beginning at 8 a.m. May 20.

Safety and first-aid contests will be held May 19, with medals to be awarded winners at the First Aid banquet at 7:30 o'clock that night.

INTERNATIONAL NEWS

All-Time Peak Production in Netherlands East Indies

Official crude oil production figures from the Netherlands East Indies closed 1937 at the all-time peak of 54,103,000 bbls. After an unimpressive start during the first quarter of 1937 production gained momentum and finished December with only minor declines from peak of the seasonal demand in August and September.

While details are lacking for the first three months of 1938, unofficial estimates show output about on a par with November and December of 1937.

The highest previous production peak was registered in 1936 when output amounted to 47,957,000 bbls. Since 1932 there have been progressive increases each year. The production records by years since 1930, follow:

Year—	Production
1930	40,357,000
1931	34,260,000
1932	37,079,000
1933	40,413,000
1934	44,247,000
1935	45,309,000
1936	47,957,000
1937	54,103,000

Mexican Government Makes Little Progress as Marketer

The Mexican government is finding it increasingly difficult to maintain the first wave of patriotic loyalty to the cause of expropriating the petroleum industry. This conclusion is reached from scraps of information leaking through the strictly censored Mexican press and from private sources. Inability to find markets for petroleum seized is gradually increasing the internal dissension.

Producing properties are being operated at approximately 10 per cent of their former capacities and refining is at an almost complete standstill. The topping plant at Mexican Eagle's refinery is still in operation. But the more modern and intricate refining facilities in all plants are idle because of lack of technicians.

The government is paying regular oil workers at rates prevailing before the most recent dispute between syndicates and companies arose. There has been no indication awards of the Labor Board and Supreme Court are to be instituted by the government. In fact, the payment of previous wage scales in the face of practically no external petroleum sales is placing a severe strain on the Mexican treasury.

As Mexico made no appreciable progress in entering world petroleum markets, the private companies from which properties were seized experienced equal hardship in reaching a satisfactory basis of indemnification. It is practically impossible to hope for a return of the properties until some definite stand is taken by the governments of offended companies on the matter of indemnification.

There has been no apparent weakening on the part of the Mexican government. President Cardenas delivered a reply to the British ambassador in Mexico City denying that the second note from Great Britain interceding in behalf of stockholders altered the situation in any respect. President Cardenas pointed out that purchasers of shares in the Mexican Eagle Oil Co. were advised by a notation stamped on the certificates that all purchasers could consider themselves Mexicans so far as their shareholdings were concerned.

Representatives of American companies involved in the Mexican expropriation action continued their conferences with representatives of the Department of State in Washington. The conferences are presumed to be for the purpose of arriving at an acceptable basis for indemnification.

In the event the Mexican government can not or will not accept the basis of indemnification finally worked out only then could the United States properly apply for return of the properties.

One shipment of asphalt consisting of 5,000 tons was reported made by the Mexican government April 25. The consignment was part of the purchase of 117,000 tons made for movement to Europe and India by H. A. Standrup & Co. of New York and represents almost a year's output of the plants in the Tampico and Tuxpan areas, according to reports from Mexico City.

An offer to purchase about 1,500,000 bbls. of gasoline by the Japanese government was reported under consideration. Mexican authorities in charge of petroleum sales were said to be reluctant to deal with Japan for fear of complications from the United States and Great Britain. There was also the fear that support of labor in several other countries might be withdrawn if dealings were carried on with "fascist" nations.

W. E. McMahon, general counsel for Huasteca Petroleum Co., subsidiary of Standard of New Jersey, speaking at a public meeting at the Blackstone Hotel. Fort Worth, Tex., last week, by invitation of the Institute of Public Affairs, cited extreme demands of Mexican labor syndicate leaders, which he said were "drawn with the full knowledge that the companies could not comply with them and continue to do business in Mexico."

He declared that the government of Mexico can not establish "valid title to the properties it has seized, because it has not paid for them and because it is entirely unable to pay for them" and called upon the Mexican government to restore the properties to their owners.

He said the oil companies made a "final effort to effect a settlement in the labor dispute and offered to comply fully by expending the sums demanded in the Supreme Court decision." This offer, he said, was conditioned upon retention of control of management by the companies, adding:

"This offer was made to the chief of the labor department of Mexico on March 12, six days before the issuance of the expropriation decree. I mention this date, because it has been stated by President Cardenas and others that this offer came too late, inferring it was a matter of hours prior to the issuance of the expropriation decree. It was made on March 12; and it was six days after this, on March 18, that President Cardenas signed the decree directing the properties of the oil companies be taken over by the government.

"By taking this action, President Cardenas ignored the plain provisions of the labor law, which sets forth an entirely different procedure to be followed when an employer fails to accept an award of the labor board."

Mr. McMahon said the law calls for a preliminary hearing, which was not held, "and to this day no list of the properties taken has been made. Government officials have even taken over oil fields and other properties belonging to companies not mentioned in the decree at all."

He said the companies had offered to grant "a long list of unreasonable demands," but the "pretext of the seizure was the rejection by the companies of certain demands of syndicate leaders which would have placed them in control of the management of the properties and taken it out of the hands of the oil companies. That was the pretext and the occasion of the seizure. It was not the cause of it. The purpose all along, dating back more than 20 years, has been to divest the privately owned companies in Mexico of their properties."

He declared payment "in cash" and at "market value" is the only kind of payment within the universal conception of compensation for expropriated property.

"Mexico is notoriously unable to pay," he said. "It has an internal agrarian debt estimated by Mexican newspapers at 1,500,000,000 pesos, the equivalent of $400,000,000, and its external debt, which is in default as to both principal and interest, amounts to more than $970,000,000."

Brazilian Oil Industry Taken Over by Government

The Brazilian oil industry became a public utility April 30 and all operations passed under government control. A decree by President Getulio Vargas provided for regulation of all phases of petroleum production, importation, refining, transportation and distribution.

Only Brazilian citizens henceforth can own or operate oil refineries. The only sizable refinery in Brazil is under construction in the State of Sao Paulo by the Standard Oil Co. of Brazil, subsidiary of Standard Oil of New Jersey, at a cost of $500,000.

Brazil has only one refinery, in Rio Grande do Sul State, partly owned by Uruguayans.

Strict Regulations on Crude And Gasoline in Japan

More burdensome regulatory measures became effective May 1 and others are to follow June 1 in conducting petroleum trade in Japan. A system of coupons upon which certain information must be entered has been inaugurated, presumably for the purpose of determining who consumes Japanese petroleum and how it is used. The new regulations prescribe that a person who sells gasoline or crude oil or a refiner of petroleum, shall not be permitted to do so without the use of coupons. Sales under the following headings are exempt: Imperial use; use by government offices; military use; private use of foreign embassies, or consulates; aeronautic use; use by ships that cruise within coastal seas or are not registered where these regulations are effective; or by ships engaged in fishing; sales of less than 1 liter of gasoline or less than 5 liters of crude oil; sales to a dealer who buys it for reselling, or to a refiner who buys it for refining or for selling; sale to a dealer or refiner who buys it for the purpose of operating petroleum carrying cars or oil tanker ships, or when a person is unable to use coupons due to an unforseen circumstance, an accident or other unavoidable reasons.

Coupons shall be issued by the prefectural governor within certain limits, the number shall be decided by the minister of commerce and industry. Gasoline coupons shall be issued for 1 gallon, 5 gallons, 5 liters, 10 liters, 18 liters (1 tin), 100 liters, 1,000 liters and 10,000 liters; those for crude oil shall be 18 liters (1 tin), 90 liters (5 tins), 180 liters (10 tins), 1,000 liters, 10,000 liters, and 100,000 liters.

Red coupons are granted to a person who desires to buy pertoleum or crude oil for use of ships; blue ones to a persons who desires to use them for other purposes.

A seller of gasoline or crude oil or a refiner shall provide a book in which he shall note the volume, value, date of delivery and the address of the deliverer of the gasoline or crude oil; volume, value, date of sales and name and address of the buyer; kind, number of exchanged coupon and the date of the exchange. A report must be made to the prefectural governor each month for each individual shop.

Amiranian Oil Co. and Inland Exploration Continue Surveys

The surveys of the East Iranian and West Afghan deserts, being carried on by Frederick G. Clapp, Lester H. Thompson, Dr. Frank Reeves, Dr. Hubert G. Schenck and others, are still in progress. Many points have been reached not previously surveyed. The work has been carried on under the auspices of Amiranian Oil Co., and Inland Exploration Co. Vast areas in the north of both countries are also being surveyed.

Understanding Pumping Well Problems

By NED CLARK, H. F. DANGBERG and P. L. KARTZKE
Shell Oil Co.

The costs involved in deep well pumping and the force of competition of other methods of production have led to intensive studies of sucker-rod pumping practices. It is now generally agreed that the determination of individual well characteristics is essential for maximum production efficiency. To facilitate diagnosis of pumping well problems, a number of mechanical devices have been developed to furnish information on well performance and equipment operation. Many of these instruments were originally designed for a definite and limited purpose but have since been found to furnish a wealth of additional useful information. It is the purpose of this paper to discuss the interpretation of information contained in the records made by pumping well testing instruments, namely, the pump dynagraph, the polished-rod dynagraph, subsurface pressure recorders, and fluid-level determining devices.

A.P.I.—Presented at Spring Meeting of Pacific Coast Division of Production, Los Angeles, California, April 19, 1938

In as much as descriptions and general uses of each instrument to be discussed have been presented in former publications (refer to bibliography), the present paper will cover very briefly the general applications of each and will emphasize recent developments or previously unpublished information.

Most recent of the important well testing instruments is the pump dynagraph which records plunger movement and variations in plunger load. The ideal card in Figure 1 illustrates the effects of the component forces acting at the bottom of the rod string. The successive steps in the recording of a pump dynagraph card are:

1. At the start of the upstroke, the traveling valve closes (point "A").
2. From "A" to "B," gas in the clearance space expands from static pressure in the tubing to entrance pressure at the pump, and the fluid load is picked up by the rods as the gas in the clearance space expands.
3. Standing valve opens at "B" allowing fluid to enter the pump when pressure in the pump drops below entrance pressure.
4. From "B" to "C," the fluid load is carried by the rods as fluid is drawn into the pump.
5. At "C," the standing valve closes as the plunger starts downward with the traveling valve remaining closed.
6. From "C" to "D," gas in the pump is compressed and fluid load is transferred from rods to tubing.
7. At "D," the pressure in the pump becomes equal to the static tubing pressure and the traveling valve opens.
8. From "D" to "A," fluid is displaced through the traveling valve into the tubing.

The pump dynagraph is used in studies of equipment operation and well performance. For complete analysis of pumping action, a subsurface pressure recorder should be used with the dynagraph. From the pump card and pressure record there can be ascertained the plunger stroke, plunger load, the proportions of oil and gas being handled in the pump, and pumping efficiencies.

In general, the pump dynagraph is used in the diagnosis of pumping troubles in known "problem" wells, and in special studies of subsurface equipment operation and design.

Polished-Rod Dynagraph

The polished-rod dynagraph has been used for several years to determine loads on surface equipment, horsepower at the polished-rod, efficiency of surface equipment, and for rough estimation of conditions at the pump. Correlation with the pump dynagraph has recently brought about a more thorough understanding of subsurface equipment operation and has greatly increased the value of the polished-rod dynagraph in subsurface equipment and well performance studies.

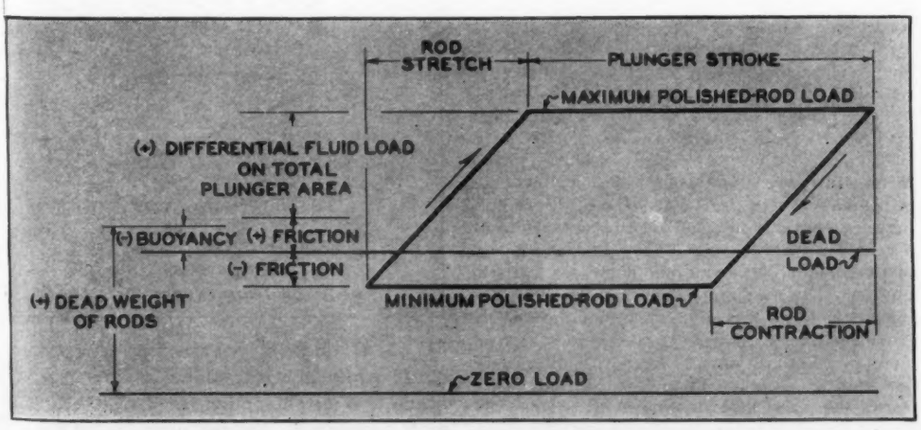


Fig. 2—Ideal slow-speed card for 100 per cent pump efficiency

Satisfactory interpretation of a polished-rod dynagraph record depends upon understanding the origin and characteristics of the component forces in the rod string. Stresses in a rod system are created by weight of the rods, buoyancy, fluid load on the plunger, friction, and dynamic forces. Loads recorded on the polished-rod dynagraph are the resultant of these forces and their reflected stress.

The ideal card in Figure 2 shows the effect of rod weight, buoyancy, fluid load, and friction load. Such a card is seldom seen in practice as it can only be produced at very slow speeds on a well having 100 per cent pump displacement efficiency. The

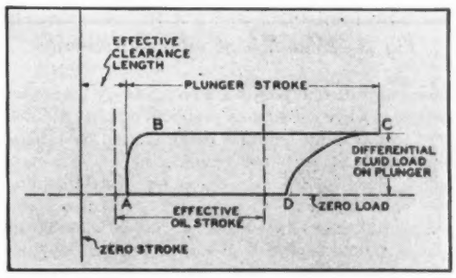


Fig. 1—Fundamental pump dynagraph card

upstroke load is the algebraic sum of rod weight, buoyancy, differential fluid load on the plunger, and rod, fluid, and plunger friction. Downstroke load is the resultant of rod weight less rod, plunger, and fluid friction, and less the buoyant effect of fluid on rods.

Dynamic or inertia loads are caused by changes in velocity of rods and fluid and are recorded at the polished-rod as added or decreased load depending upon the direction of change in velocity.

Considering the rod string as a long elastic body, a tensile force applied at the fixed (polished-rod) end of the system will travel down the rod as a stress wave moving at a constant speed—found in practice to be approximately 15,800 feet per second (see reference 7), and will be reflected from the free (plunger) end as a compressive force. Thus any abrupt increase in load recorded on the polished-rod will be reflected in the manner described and recorded as a decrease in load 2D/15800 or $T_n/2$ seconds later, "D" being the length of the rod string and T_n its natural period of vibration, as indicated in Figure 3. This wave will again be reflected downward, this time as a compressive force. Thus, the rod system will vibrate in its natural frequency with the wave gradually diminishing in intensity until dissipated by the effects of friction. Any load applied at the plunger will be recorded at the polished rod $T_n/4$ seconds later. Thus, the "pick-up" or closing of the plunger valves is recorded during the upstroke of the polished-rod. In Figure 3, an actual pump dynagraph card, together with the corresponding polished-rod card, demonstrates the effects of time lag and stress reflection. The "pick-up" at point "A" is recorded at the bottom of the stroke on the pump card and approximately 20 inches from the bottom of the

polished-rod card. In the example shown, the plunger lags behind the polished-rod by one-quarter of a wave length. Thus, the plunger starts upward $T_s/4$ seconds after the polished-rod, and the stress wave, starting at the plunger as the fluid load is picked up, travels upward and is recorded at the polished-rod $T_s/4$ seconds later to $T_s/2$ seconds after start of the polished-rod upstroke. The same impulse is recorded alternately as a compressive or tensile stress at $T_s/2$-second intervals. This is clearly demonstrated when the polished-rod loads are plotted on a time basis, the original impulse of the "pick-up" and three reflections

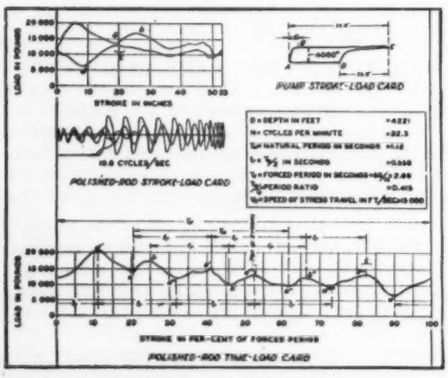


Fig. 3—Evidence of reflected stresses

being indicated at points a, a′, a′′, and a′′′. Another series of wave reflections is shown at d, d′, d′′, and d′′′, the original impulse being caused by release of fluid load with the opening of the traveling valve. The exact points of standing valve opening and closing generally cannot be detected in a surface card because, when gas is being handled in the pump, the change in load accompanying these actions is small. The point "B" and its reflections are shown in the time-load card only to indicate their relative positions.

In the interpretation of polished-rod dynagraph cards, an understanding of the nature of forces created in a rod system and a clear conception of the laws governing stress transmission make it possible to isolate and recognize characteristic evidence concerning well performance and pump operation. Figure 4 shows the influence of various types of pump action on pump dynagraph cards, and evidence of the same phenomena in the corresponding polished-rod dynagraph cards. The points a, b, c, and d correspond to A, B, C and D, as explained for Figure 1. Example 1 in Figure 4 is a slow-speed card taken with the pump being completely filled with liquid. The polished-rod card is markedly similar to the ideal slow-speed card shown in Figure 2, showing no evidence of inertia loading nor reflected stresses and no measurable evidence of time lag. The effect of rod stretch is plainly evident in the gradual pick-up of load from a to b. At 2 in Figure 4 are shown pump and polished-rod cards taken with the pump operating at 15 cycles per minute under the same well conditions as Example 1. The pump card is similar to that in the first example except for the greater length of stroke due to plunger over travel. The polished-rod card shows the effects of time lag and inertia loading. In Figure 4, Example 3, are cards taken under the same well conditions as Examples 1 and 2, but with the plunger valve sticking open during part of the upstroke. In Example 4, the plunger valve sticks open during the full stroke. At 5 in Figure 4 are cards taken at 20 cycles per minute with the pump being partially filled with liquid, and the plunger "pounding fluid." The pump card shows that the full fluid load is carried during part of the downstroke, and is abruptly released as the plunger hits the liquid. The same abrupt decrease in load is recorded on the polished-rod card. (Vibrations recorded on the polished-rod card immediately after the first impulse are due to oscillations of the stylus and not to stress waves in the rod string.)

It has been observed that in many "pumped off" wells the volume of liquid entering the pump fluctuates rapidly and erratically between strokes, whereas, in wells pumping large amounts of gas, the fluctuation in liquid volume is more gradual.

Figure 4-6 shows cards taken with the pump almost completely gas locked. The pump card shows that the fluid load is gradually transferred from traveling to standing valves as gas is compressed in the pump during the downstroke and gradually transferred back to the traveling valve on the upstroke as the gas expands in the clearance space. The same gradual changes in load also occur in the polished-rod card, although they are somewhat distorted because the card is not plotted on an equal time basis. Figure 4-7 illustrates the effect upon pump and polished-rod cards of varying percentages of gas in the pump which causes the traveling valve to open at different points in the downstroke.

Aside from information obtainable from pol-

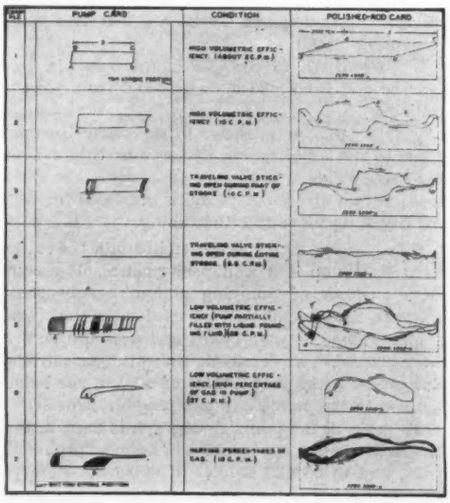


Fig. 4—Comparison of pump and polished-rod cards

ished-rod cards taken during normal pump operation, pertinent information may be obtained by special handling of the pump. For instance, Figure 5 shows a series of cards taken at the same pumping speed after a 20-minute shutdown of the well. Card 1, taken five minutes after starting up, shows a high volumetric efficiency and an abrupt dropping of the fluid load near the top of the plunger stroke. Card 2, taken 10 minutes later, shows a lower volumetric efficiency, and the fluid load being released near the middle of the pump stroke. Card 3, taken five minutes after Card 2, shows a very low volumetric efficiency and fluid pound near the bottom of the stroke. This series of cards clearly indicates that the well is "pumped off" and that very little gas is being handled by the pump.

As a further example of information which may be obtained with the polished-rod dynagraph, Figure 6 shows typical information obtainable by means of slow-speed cards. Figure 6A shows a comparison of slow speed and pumping cards taken in a well with a worn pump. The loading in the pumping card appears normal and the pump efficiency is evidently high. The slow speed card, however, shows no fluid load on the plunger, the difference between the upstroke and downstroke loads being twice the friction load. In Figure 6B is given another comparison between pumping and slow speed cards. In the card taken at 22 cycles per minute the gradual dropping of the fluid load and gradual variations of the point of traveling valve opening indicate the action of gas in the pump. The slow-speed card taken immediately afterward bears out this conclusion by showing a low efficiency and the effects of gas compression and expansion. If the partial filling of the pump had been entirely due to low fluid level, the slower pumping speed would have allowed the pump to fill.

The use of the polished-rod dynagraph in a simple method of determining the approximate plunger stroke (where rod-type pumps are used) is illustrated in Figure 7. For this example, a case was chosen where the corresponding pump cards were available. In applying this method, the rods are first lowered until the pump "hits down," then the plunger is spaced higher, in successive stops of a few inches each, until the pump hits up. The available length of stroke in the pump, less the distance the rods are raised, is the approximate length of the plunger stroke. As may be seen in Figure 7, an abrupt tensile stress is recorded at the polished-rod when "hitting-up" and a similar compressive stress is recorded when "hitting down."

Subsurface Pressure Recorder

In the study of pumping wells, the subsurface pressure recorder is used for determination of well productivity. Interpretation of subsurface pressure records can be clarified by an outline of testing procedure. The pressure instrument, including a 72-hour clock, is run in on the rods and set below the standing valve. After the well has pumped up slowly, it is produced at as high a rate as practicable for approximately 12 hours, when it is respaced, the governor set, and production continued until equilibrium between pressure and rate of production is reached. This point will, of course, vary from well to well and only by trial can the

(Continued on Page 41)

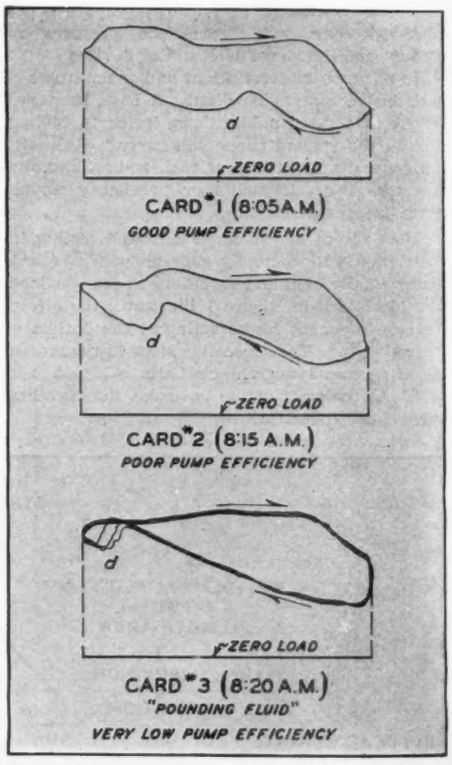
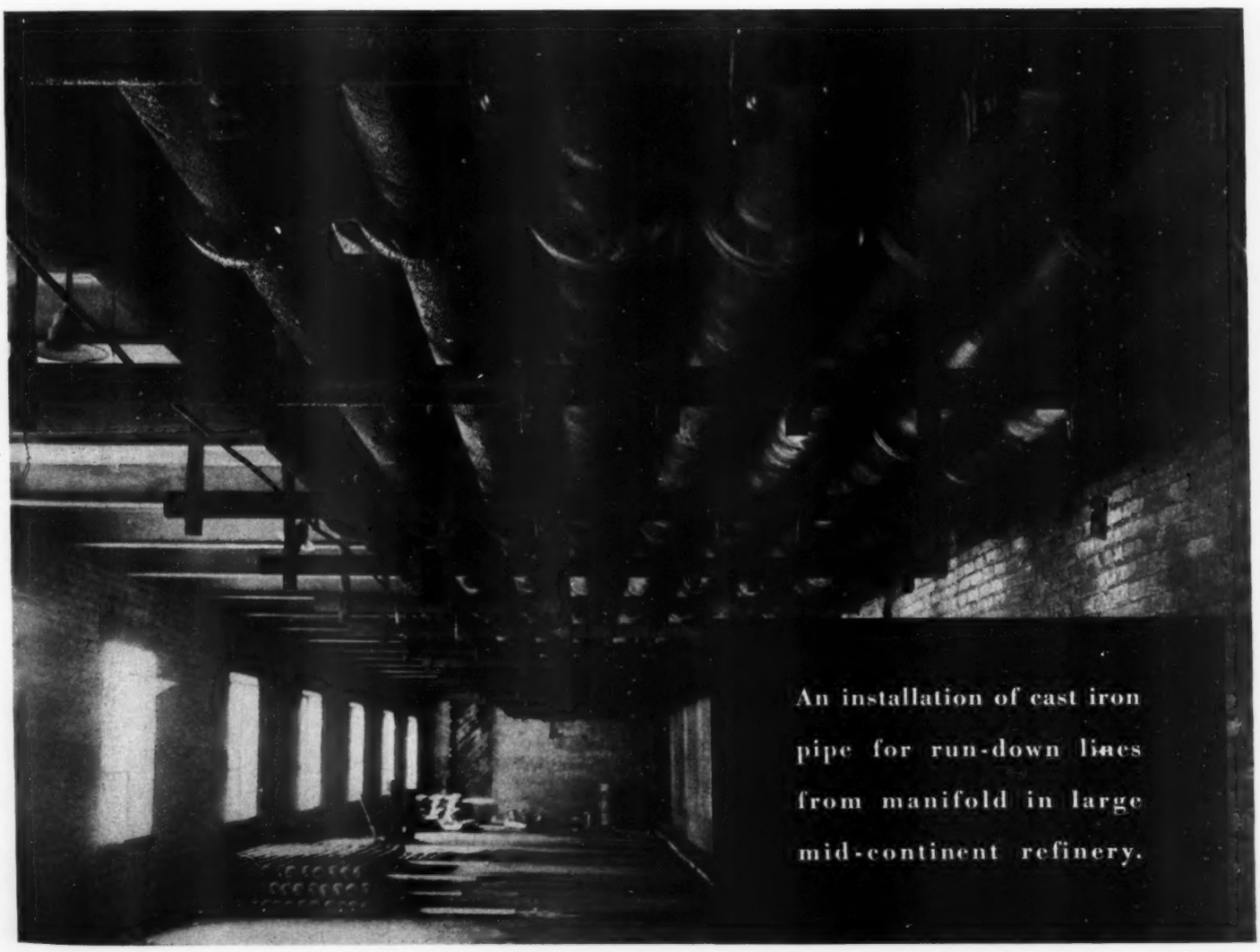


Fig. 5—Change in polished-rod dynagraph cards while pumping down a low head of liquid. (Well shut down at 7:40 a.m. to install dynagraph. Started pumping at 8 a.m. Pumped at constant speed of 22 C.P.M.)

CAST IRON PIPE LINES are long-lived and economical

If frequent renewals of short-lived pipe lines are running up charges against maintenance, replace them with cast iron pipe. As a conduit for carrying corrosives cast iron pipe has *longer life* and *greater resistance to corrosion* than any other low-cost material. Figured per service-year the economy of cast iron pipe is undeniable and a real contribution to lowest maintenance cost per barrel of crude, as many modern refineries have demonstrated. Cast iron pipe is available in bell-and-spigot, plain and threaded ends, and flanged types, or with bottle-tight mechanical joints for high pressure. Diameters from 1¼ to 84 inches. Address inquiries to The Cast Iron Pipe Research Association, Thos. F. Wolfe, Research Engineer, 1015 Peoples Gas Building, Chicago, Illinois.

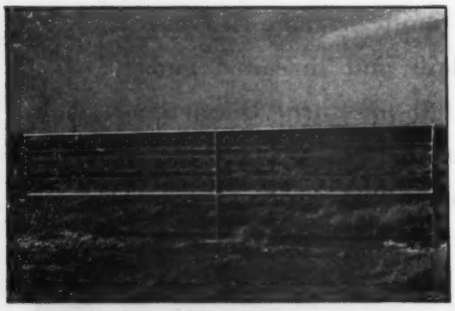


An installation of cast iron pipe for run-down lines from manifold in large mid-continent refinery.

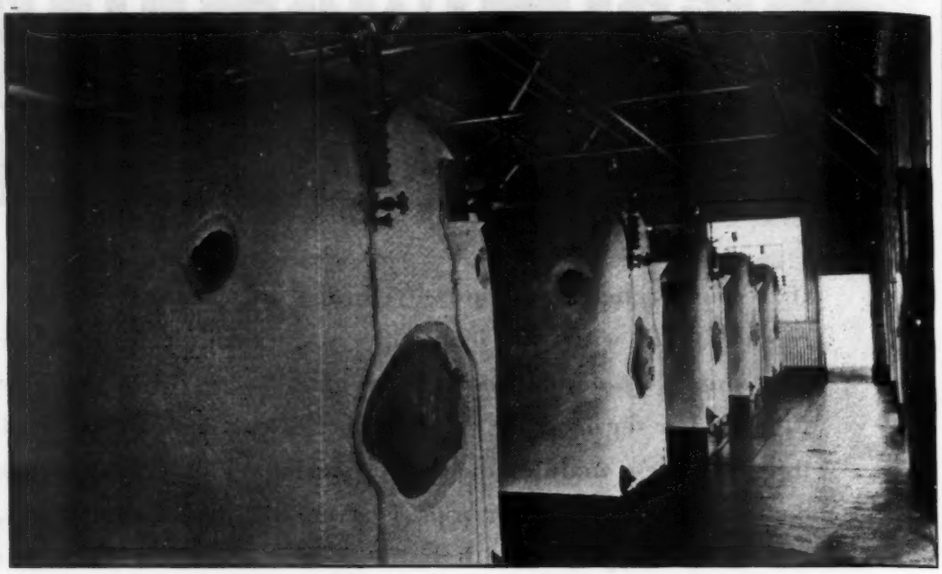
OPERATING IDEAS

Wells Located by Guide Rack

On one large oil company's tract in West Texas the approximately 90 producers on 10,000 or more proven acres are so scattered, many times one well to the section, that it is very difficult to find the way to certain well locations. Guide racks, like the one



shown in the accompanying photograph, are placed at each side road leading off the main highway to indicate on which side road, and on which side of the road, each well is located. As new wells are drilled their number is painted on the proper circle of the rack. The racks are constructed from used materials and are welded throughout.



Drainage Pipe for Boiler Gauge Cock

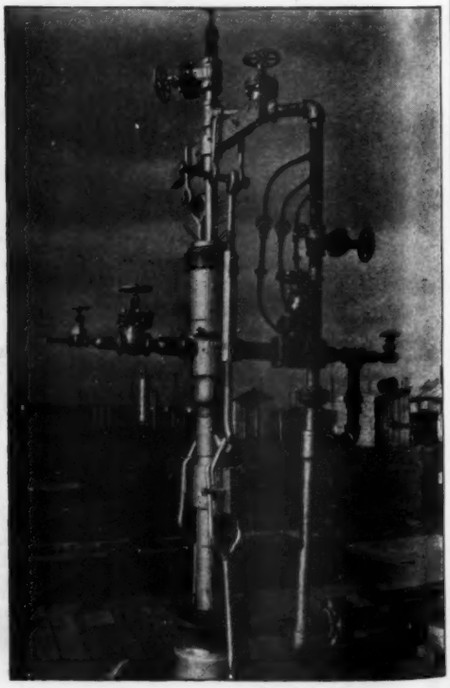
A method for taking care of condensed water released from the gauge cocks on its battery of boilers in a Texas Gulf Coast natural gasoline plant has been devised by one company. This was one by placing a funnel-shaped vessel under the gauge cock, and by means of pipe attached to the lower end of the funnel the water is allowed to drain into the blow-off line. This practice makes it much easier to keep the boiler-room floor clean than by the old method where water was allowed to run down the end of the boiler and onto the floor.

Unusual Throttle on Gas Well

An independent operator in the Haven field of western Kansas has two comparatively large gas wells which produce from 11,000,000 to 15,000,000 feet of gas daily. On each of the wells the main flow line is by-passed through three 1-inch lines containing valves for throttling the gas flow. By cutting down the flow to a smaller volume the operator has found that the amount of casinghead gasoline recovered from the gas seems to be increased. The hook-up used on the two wells is shown in accompanying photograph.

Miniature Pumping Unit for Shallow Well

In the Yates pool of Pecos County, Texas, there are many wells producing from a depth of 14 to 100 feet. In keeping with the light pumping requirements of the wells, one oil company has erected a miniature standard rig-front driven by a small 3-hp. electric motor. The samson post is made from a 4 by 4 and is only 6 feet high; the walkingbeam is but 4 feet long and is made from a 2 by 6. The well is pumping 16 strokes per minute with 10-inch stroke.



Preservation of Hole Size in Cable Tool Drilling

By MITCHELL TUCKER

It is particularly important to preserve hole size when drilling exploratory wells with cable tools in areas where it may be necessary to test several zones before reaching the projected total depth. With rotary tools, the penetration of intermediate water sands does not interfere with deeper drilling. When using cable tools, however, a hole full of water must be cased off, necessitating a reduction in the size of drill hole, additional expense, and in many cases the abandonment of wildcat wells before reaching the desired objective.

In the West Central Texas district, where a great deal of cable tool work is done through the thick multiple sand and lime sections of the Pennsylvanian groups, the problem of maintaining hole size has received considerable study. C. K. West and Paul Pitzer, prominent independent operators of Breckenridge, in cooperation with the Chemical Process Co., have developed a successful means of drilling through one or more holes full of water with cable tools without reducing the size of the hole. Briefly, the process consists of opening up the water-bearing formation with acid and squeezing cement by the displacement method into the horizon.

One outstanding example of how five separate and distinct water-bearing sands were shut off without reducing hole size is provided by the Pitzer and West-Tide Water Oil Co. No. 1 Williamson, in the northwest corner of the James pool of Young County. This well was drilled in 1935 as further development of the Pitzer and West-Tide Water joint properties in the pool. It proved to be one of the defining wells on the northeast edge of production, as it checked about 100 feet low on all important markers. However, in order to test the James pay (Smithwick or Caddo lime), 6⅝-inch casing was set at 3,850 feet on top of the lime as was customary in the field. After drilling about 150 feet into the lime, with tight porosity and only slight shows of oil, a hole full of water was encountered at 4,206 feet. At this point, 5 3/16-inch casing was run to shut off the water, reducing hole size to the point where 5-inch tools were required.

The operators desired to continue drilling deeper for a test of the lower Smithwick, Marble Falls, and possibly the Ellenburger. Drilling was continued to a total depth of 5,020 feet, and throughout this open hole interval a total of five holes full of water were drilled and shut off without reducing hole size.

At a depth of 4,286 feet the first water sand was encountered in gray Caddo lime, which carried slight stains of oil. After a 2,000-gallon acid treatment, the well proved to be a water producer, with small quantities of oil. Under the conventional method of cable tool drilling, there would have been nothing to do but plug the hole or begin the tedious job of underreaming, as the size of the drill hole could not be further reduced and still continue drilling below this depth. At this point it was decided to conduct some experiments in plugging off water and drilling deeper with cable tools.

The displacement type of squeeze cement job was made. In so doing, the fluid level or slight bottom-hole pressure was ignored, 40 sacks of cement were mixed and dumped into the hole, followed by the exact amount of water required to fill the 5 3/16-inch casing and open hole down to the point where water and oil was coming into the well bore. As the fresh water was pumped in behind the cement, and while the salt water in the hole below the cement was being forced back into the formation, the pressure gradually built up to about 350 pounds, but by the time the cement had all been displaced into the formation pressure had risen to about 1,000 pounds. The well was shut in for three days, plug drilled, and hole found to be entirely dry. Drilling was continued in a hole so dry that fresh water had to be dumped in while drilling with cable tools.

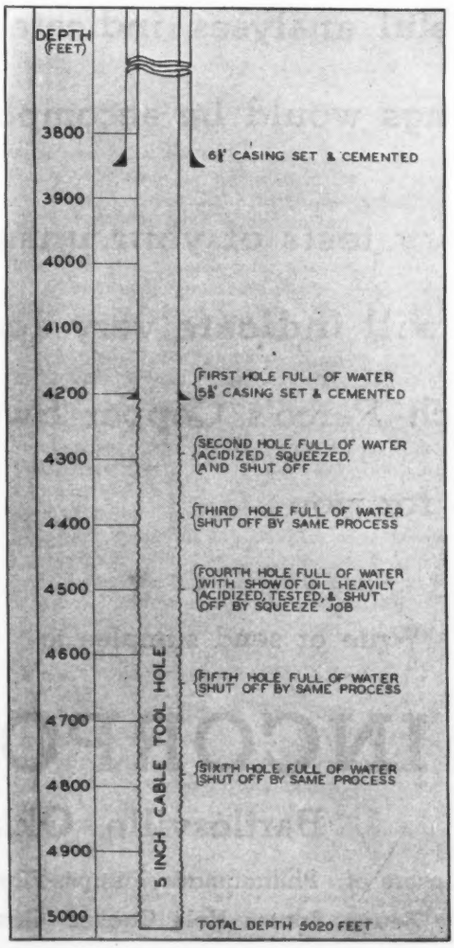

DEPTH (FEET)
3800
3900
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
6¼" CASING SET & CEMENTED
FIRST HOLE FULL OF WATER
5⅛" CASING SET & CEMENTED
SECOND HOLE FULL OF WATER ACIDIZED SQUEEZED, AND SHUT OFF
THIRD HOLE FULL OF WATER SHUT OFF BY SAME PROCESS
FOURTH HOLE FULL OF WATER WITH SHOW OF OIL HEAVILY ACIDIZED, TESTED, & SHUT OFF BY SQUEEZE JOB
FIFTH HOLE FULL OF WATER SHUT OFF BY SAME PROCESS
SIXTH HOLE FULL OF WATER SHUT OFF BY SAME PROCESS
5 INCH CABLE TOOL HOLE
TOTAL DEPTH 5020 FEET

Diagram of the 5,020-foot exploratory hole drilled with cable tools. During the open-hole interval from 5 3/16-inch casing seat at 4,208 feet to total depth, five separate water-bearing sands were shut off without reducing hole size.

At 4,390 feet another hole full of water was penetrated. The same identical process of applying a small acid charge, and following with a displacement squeeze cement job, was used to completely shut off this water.

From 4,478 to 4,502 feet, a porous section was drilled which appeared to contain sufficient oil to make a commercial producer. After heavily acidizing the formation, 3-inch tubing was run and the well pumped several days, yielding from 400 to 500 bbls. of water and diminishing quantities of oil. This prolific water bearing formation was successfully shut off by the same process.

Two other large water producing zones were encountered from that point to total depth, each of which were shut off in the identical manner. This hole proved low in all formations to its abandoned depth of 5,020 feet, and water was present in all porous horizons.

In order to eliminate any possible error in the displacement method in knowing exactly when all the cement is properly placed, another slightly different method has been used. In the particular well where this procedure was tried, there was quite a bit of open hole between the casing seat and the occurrence of water, rendering the accurate calculation of necessary displacement water impossible.

A total of 42 sacks of cement was figured for the job. The first 30 were mixed and dumped in the ordinary manner, but the last 12 sacks were mixed with 100 pounds of cotton seed hulls. It was the assumption that when the cement mixed with hulls reached the formation, the fibrous and expanding tendency of the hulls would tend to clog or obstruct the passage of any more cement into the formation, and at the same time provide an effective seal on the lime face. This proved to be true, because as the cement was being pumped down, pressure rose about 200 pounds at the point where first cement arrived at the formation. As the cement was being pumped back, pressure built up to about 900 pounds and (as checked by displacement calculations) when the first of the 12 sacks of heavy cement hit the formation, pressure jumped up on just a few strokes of the pump to about 1,500 pounds.

Another application of this same type job was developed in a well producing from two pay zones, where it was desired to shut off the upper (low pressure) and produce from the lower (high pressure) pay.

This well was completed several years ago, with pipe set on top of the lime, and completed about 50 feet into the saturated section for an initial production of 250 bbls. The decline in producing rate was rapid, and in about two years it was down to 10 bbls. daily. Successive acid treatments did not sustain the producing rate. Tools were strung up and the hole drilled to a deeper point in the lime,

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which was known to be productive in other parts of the field. After going about 100 feet deeper the other saturated zone was encountered, and yielded small quantities of oil before being acidized or shot. From experience in other wells, it was known that acidizing would materially help this zone, but it was impossible to acidize the lower level in view of the fact that the upper pay had been depleted to the point where it would take fluid almost at a vacuum. The lower section required from 700 to 800 pounds pressure to properly apply the acid. In lieu of acidizing, the lower section was shot and produced for several months, but production without the aid of acid was not profitable.

In preparation to treat the lower formation, the hole was plugged back close to the bottom of the first pay. The problem then was to successfully shut off a water- and oil-bearing formation which would take almost exhaustable quantities of fluid at so low a pressure it was commonly called a "vacuum well."

In accomplishing the shutoff, the same displacement method of squeezing cement was used. A total of 80 sacks were run, the first 50 a regular mix, the next 24 mixed with 100 pounds of cotton seed hulls, and the last 6 sacks mixed with an additional 100 pounds of cotton seed hulls. Introduction of the first 50 sacks into the formation developed no observed pressure whatever. As the second batch of 24 sacks with 100 pounds of hulls hit the formation the pressure built up to about 350 pounds, and as soon as the last batch of six sacks with 100 pounds of hulls reached the formation face, pressure jumped up to 1,750 pounds, where the well was shut in. When the plug was drilled, there was not a trace of either oil, gas or water, even though 1,750 pounds pressure had been applied on what was before a vacuum well. The hole was cleaned out to bottom, the lower 800-foot horizon acidized, and commercial production followed.

WELL PROBLEMS

(Continued from Page 36)

length of time necessary be established. Approximately 40 hours has proven to be adequate in most wells tested thus far. The pumping rate is then decreased and a second equilibrium point established. Two or four hour gauges of oil and water production and tubing and casing gas rates are measured during the test. The static pressure is recorded when the instrument is run in the hole, so that three points on the well's pressure production rate characteristic are obtained. At the conclusion of

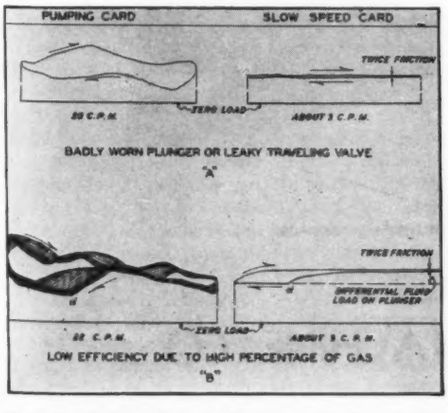

Fig. 6—Examples of the use of slow-speed cards

the test, the static pressure should be checked by running the pressure instrument on a wire line, and a pressure gradient established. It would be desirable to obtain equilibrium pressures for more than three production rates, but this is ordinarily impossible due to the limited time available. From several widely separated points on the pressure-production rate curve, it is possible to predict, by extrapolation, the absolute well potential, and to determine the well's productive index. . . .

Fluid Level Determining Devices

The use of fluid level determining devices has a very definite place in well studies. Primarily these instruments provide a simple method of making rapid lease or field surveys. One level determination may possibly eliminate a major

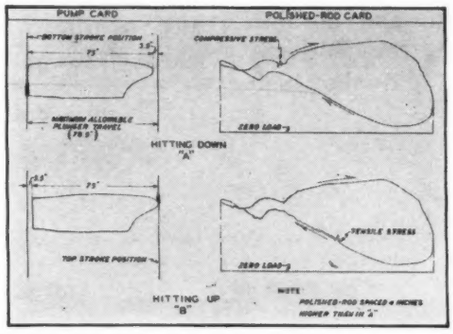

Fig. 7—Determination of approximate plunger stroke by spacing plunger to hit down and to hit up

portion of the wells from further study by locating the fluid level at or reasonably near the pump intake.

This device can also be used in determining the productive index and absolute well potential, the usual procedure being to:

1. Determine, for a constant producing rate, the density gradient of the fluid in the casing from successive fluid level determinations at various pressures. The density gradient can then be extrapolated to give the pressure at the pump intake.
2. Repeat this procedure for two or more constant rates of production, and
3. Plot intake pressure versus producing rate to obtain the familiar productivity curve.

Another method of determining pump intake pressure with the fluid level finder is to allow a casing pressure to build up and depress the fluid nearly to the pump. With a very low fluid head on the pump, there will be characteristic vibrations set up in the casing gas column which are recorded by the fluid level finder. A check of the fluid level is then made, and the entrance pressure calculated by correcting for the weight of the gas column.

This instrument is particularly adapted to use in determining productivity in wells which reach equilibrium very slowly—more than 72 hours, or which do not regain production lost during shutdown time.

Profitability of Well Studies

Accurate information on well and equipment performance is desirable for the following reasons:

(a) Maximum production rates must be maintained in some cases to prevent drainage.

(b) Equipment capable of producing the well at its maximum rate must be available in some cases to maintain potentials.

(c) Maximum production rates may be economically necessary to realize the greatest return on the investment.

(d) Maximum production rates may be necessary to prevent water flooding of low pressure sands.

(e) Savings may be realized by increasing efficiency of operation.

Individual well studies and any equipment changes resulting therefrom must be justified by increases in the present worth of the net value of oil, gas and gasoline.

With these factors considered, it is possible to pursue a course that will result in the greatest return. To obtain this desired end may require such changes as:

(a) Changes of stroke length, pumping speed, or pump depth.

(b) Installation of pumps with proper capacity.

(c) Equipping with optimum size rod or tubing strings.

(d) Achieving better gas and oil separation with more efficient gas anchors.

(e) Installation of surface equipment with the proper rating.

The type of change to be made can be fully investigated and the economic desirability weighed. In the end the program to be carried out should be clearly justified.

Summary

Use of instruments adapted to solution of various phases of pumping well problems may be classified as follows:

1. Well performance.
   (a) Subsurface pressure recorded.
   (b) Fluid level finder.
   (c) Polished-rod dynagraph.
   (d) Pump dynagraph.
2. Subsurface equipment performance.
   (a) Pump dynagraph.
   (b) Polished-rod dynagraph.
3. Surface equipment performance.
   (a) Polished-rod dynagraph.

Selection of the instrument used will depend upon the information desired, the accuracy necessary, and the cost and economic justification of the test.

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Day of Diesel in Autos Still Far in Future

The popular impression that the day of the diesel engine in automobiles has arrived, or is near, is far from squaring with the facts, according to Dr. D. P. Barnard, chief of the engine laboratory of Standard Oil Co. (Indiana). In a written statement on the subject, Doctor Barnard declares that the spark-ignition engine commonly in use remains basically best suited to work in which low first cost and great flexibility in use are important. The compression ignition engine (diesel) can be used successfully only where its advantages justify greatly increased investment and various important concessions.

"Present fuel injection systems for diesels of small size cost about as much as a complete gasoline engine of the same capacity," he states. "And to date a cheaper and more successful type of fuel injection system is not available. For this and similar reasons a small diesel engine costs inevitably two to three times as much as a comparable gasoline engine.

"The diesel's most logical place on the highway is under conditions of continuous use and substantially constant scheduled speeds. Obviously, it does not fit requirements for the great bulk of passenger traffic."

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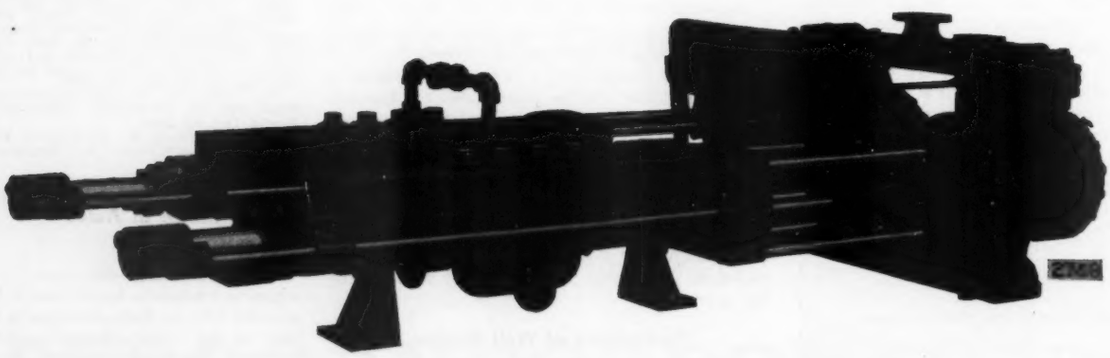

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Wilshire Oil Installs New Reforming Unit at Norwalk Refinery

By T. P. SANDERS

During the past few years Wilshire Oil Co.'s Norwalk refinery has often been the scene of major construction activities. Twenty months ago the original plant was completed, attracting widespread attention because of its 12,000-bbl. full-flashing two-coil selective cracking unit, its Stratford acid-treating plant, and its world's-largest cooling tower. Shortly after completion of the cracking facilities work was started on a polymerization plant, one of the first on the Pacific Coast. The plant has been in operation for eight months, and its success has resulted in the company's decision to erect a reforming unit. By providing higher-octane blending stock for the polymer product the reformer will have the effect of increasing the refinery's output of finished top-grade gasoline.

A contract was let on March 3 by the Wilshire concern to Fluor Corp., Ltd., of Los Angeles to cover erection of the reformer and auxiliary equipment. The plant is being designed by Universal Oil Products Co. and its patented process will be employed throughout. Cost will approximate $500,000, which will cover the installation of a new crude furnace and include changes to be made on the refinery's 790-foot cooling tower.

Gasoline Output Balanced

Daily gasoline output of the refinery will not be appreciably increased by the addition of the reformer. While the quantity of high-octane gasoline will be greatly increased, the straightrun gasoline will be reduced proportionately. The result will be an over-all output more nearly balanced to present-day retail demand. At the Norwalk refinery straightrun gasoline will be used as charging stock for the reformer.

For eight months the catalytic polymerization unit, licensed from Universal, has been producing 300 bbls. per day of 82-octane polymer. At present this is being blended with straightrun gasoline to make a finished motor fuel of 72 to 74 octane number. Sold as an additional grade of gasoline under the name "Polly gas," this product has found an increasing market. In spite of the rapidly mounting gasoline stocks in California its demand threatens to outstrip supply at the present rate of production. By raising the octane number of the blending stock from 69 to 71, it can be seen that the quantity of finished "Polly gas" may be considerably increased without changing the quality. Also, the gas from the stabilizer of the reforming unit will be treated in the polymerization plant and this will yield an additional 90 to 100 bbls. of 82-octane polymer.

The reforming unit will be a once-through installation using an up-shot fired furnace. The charge will consist of heavy naphtha which will have a boiling range from 300° to 475° F. and an octane number of about 45. This material will be obtained from the stripping tower on the existing crude column. The entire straightrun stream will not be taken to the reformer. A light cut of 70-octane gasoline, amounting to approximately 25 per cent of the total cut, will be taken overhead and stored for blending as there will be no need for reforming this material. The remaining 75 per cent of the straightrun stream will be removed from the naphtha stripping column and charged directly to the reformer without intermediate cooling.

The reformer charge pump will operate at a pressure of 1,000 to 1,200 pounds, forcing the naphtha charge through the reforming-plant heater where its temperature will be raised to 950 or 1,000° F. At this temperature it will be flashed from a pressure of 750 pounds per square inch into a combination flash chamber and fractionating tower. The flash chamber will carry a pressure of 100 to 150 pounds. A 400-endpoint reformed product will be taken from the top of the fractionator. These overhead vapors will be condensed by exchanging heat with unstabilized distillate.

It is anticipated that a yield of 80 per cent of unstabilized 73- to 74-octane gasoline will be obtained from the heavy naphtha charge. The yield will decrease somewhat when this is stabilized, and the octane number will be reduced to 71. The stabilized product will be blended with polymer product and with some of the light fraction from the straightrun stream.

There will be a high-gravity residue from the bottom of the combination flash chamber and fractionating tower in the reforming unit. This is expected to constitute from 3 to 8 per cent of the total naphtha charge. It will be removed from the tower and charged directly to the flash chamber of the existing cracking unit, and an additional gasoline yield will be realized from the cracking plant because of this additional charge.

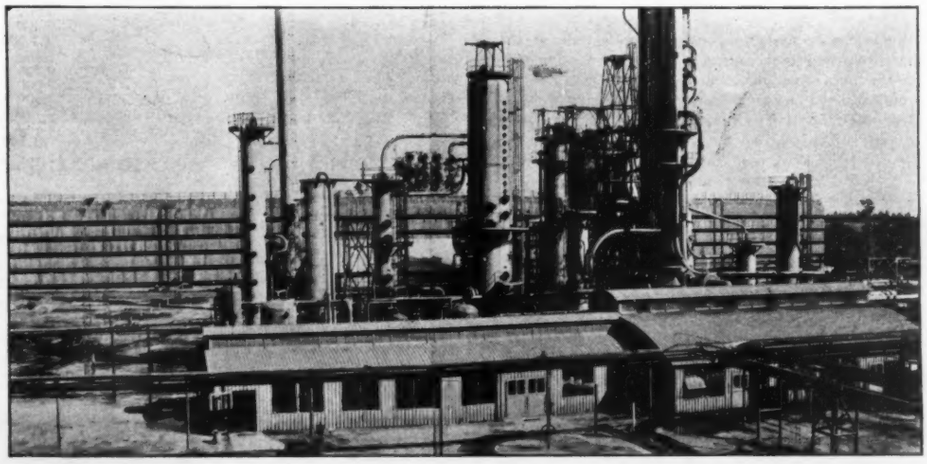
Quench oil from the pressure-control valve in the transfer line will be taken from a low level in the fractionating column of the reformer. This material will first be used in the reboiler of the stabilizer column.

In addition to the construction of the reformer, a new crude heater will be erected at the Norwalk refinery. This will have the effect of increasing the crude oil capacity of the refinery. However, the chief reason for its installation will be to permit the new reformer to operate independently of the cracking plant when it becomes desirable to do so. The Dubbs unit combines crude-topping and cracking, the heat for the topping operation being derived through heat exchangers from the hot products leaving the fractionator. A shutdown for cleaning or repairs in the cracking plant would necessitate a shutdown of the reforming unit unless another source of straightrun gasoline were available. The new crude heater will provide such an independent source, and it may or may not be operated while the existing unit is in operation.

Topping Operations

The new furnace will have a daily crude capacity of 17,000 bbls. per day, but its make and type have not been decided as yet. At the present time the Norwalk refinery is handling 14,000 bbls. of crude per day, but this will be gradually increased to 17,000 bbls. per day. When the heat exchangers of the combination unit are clean, the new furnace will be fired very lightly, or possibly not at all. As the heaters become dirty and less efficient the new furnace will be fired more heavily. Then when the heat exchangers are being cleaned, or when the cracking unit is shut down for any reason, the new furnace will assume the entire heat load of the crude-topping operation. A deeper cut will be taken in the topping operation than has been the case in past operation. Since part of the kerosene fraction will be removed, the remaining material will be reduced crude rather than topped crude.

Completion of the reforming unit and furnace is scheduled for July 1, 1938. No additional cooling-tower construction is contemplated since the present tower will be capable of handling the additional load and a section is being divided off for this purpose.



Combination crude-topping and cracking plant at Wilshire Oil Co.'s Norwalk refinery. The new reforming unit will be installed in the space to the left of the plant

Progress in METALS

By W. L. NELSON

Rupture Strength of Steels at High Temperatures

Abstract of "High Temperature Characteristics of Steels as Revealed by the Stress-Rupture Test" by White, Clark and Hildorf before the Western Metal Congress, March 21 to 25, 1938, Los Angeles, Calif.

The present day creep test is rather complicated and consideration should be given to more simple means of indicating high temperature characteristics. In all discussions of high temperature applications it should be recognized that considerable differences may exist in the necessary qualifications. As an example, most applications may be divided into two general groups depending on the permissible amount of deformation during service. In certain applications the total extension is limited to very small amounts of the order of 1 per cent in 10 years, while in others relatively large deformations are allowed, and in fact, the life of the equipment is often based on visual extension. Other classifications could be made on the relative importance of strength and surface or structural stability.

Creep characteristics are an ideal basis of design for those applications in which the total amount of deformation is limited to very small amounts. They are likewise of value for those applications in which the deformation is not limited, but they do not in these cases necessarily define the complete high temperature behavior of a given steel. For these latter applications it is believed that the stress-rupture characteristics are of considerable value either by themselves or in conjunction with the creep properties.

Results to date indicate that a logarithmic plotting of stress versus the corresponding fracture time results in a single straight-line relationship, provided that the steel possesses surface and structural stability under the given test conditions. In the absence of sufficient stability, this relationship is expressible by two straight lines of different slopes. Illustrations of such curves are given on page 51 of The Oil and Gas Journal of February 3, 1938.

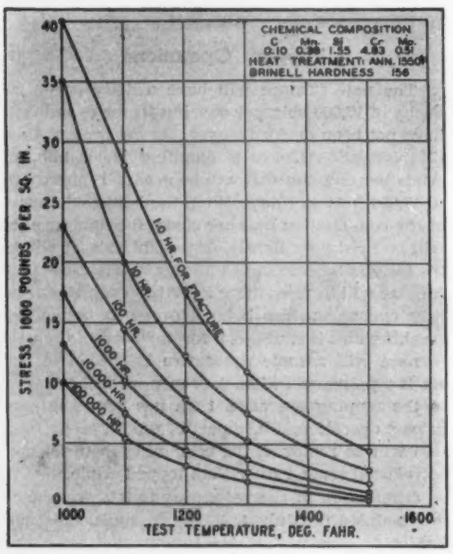


Fig. 1—Stress required for fracture in designated time periods for high silicon 4-6 Cr. Mo. steel

Load carrying ability—In order to obtain stresses corresponding to the more prolonged fracture times, such as 10,000 or 100,000 hours, a certain amount of extrapolation will in general be necessary, for obviously it would be impossible to conduct all tests for these time periods. Extrapolations are, however, believed to be more justifiable than in the case of certain other tests. With the creep test, for example, the values upon which the extrapolations are based, i.e., creep rates, are themselves dependent on the testing time. On the other hand, the fracture times determined experimentally are definite and fixed values. All evidence obtained to date indicates that in the presence of suitable surface and structural stability a single straight-line logarithmic relationship will exist for prolonged testing periods.

Table 1 gives the rupture strength for a number of steels at the indicated temperatures. In certain cases stresses are included for fracture times as prolonged as 100,000 hours. The maximum testing time actually was 14,000 hours and consequently the values for the longer fracture times were obtained by extrapolation.

One of the most frequently voiced objections to the use of creep strength data for design is the fact that for short periods of time the metal may be exposed to exceedingly high temperatures which may greatly reduce its life to times much shorter than those inferred by creep-strength data. Stress-rupture tests can be used to indicate the degree of overheating permissible with a particular steel under a given stress. Such a relationship is shown in Figure 1. If an operating stress of 5,000 pounds is assumed at 1,000° F., then for this particular steel the temperature could rise to 1,110° F. without fracture resulting in less than 100,000 hours. If the temperature should rise to 1,175° F. fracture would occur in 10,000 hours, at 1,240° F., in 1,000 hours, and at 1,400° F. in approximately 10 hours.

Stress-rupture versus creep characteristics—Since creep values have already been used widely for design purposes, a comparison of the results from the two types of tests should give an indication as to the relative factor of safety to be employed.

From results available it would appear that a constant relationship does not exist between the results from the two types of tests as the ratio of creep strength (0.01 per cent per 1,000 hours) to the rupture strength (100,000 hours) varies from 0.478 to 1.444. When the results are further analyzed it becomes apparent that under certain conditions a more definite relationship may exist. For example, at the temperatures considered, the range in this ratio for all the steels containing from 2.0 to 6.0 per cent chromium is from 0.478 to 0.567. In other words, for pearlitic-type steels containing this amount of chromium, the stress required for fracture in 100,000 hours is approximately twice the stress required for a creep rate of 0.01 per cent per 1,000 hours at 1,000, 1,100 and 1,200° F. A comparison of creep strengths and rupture strengths is given in Table 2.

Other applications of rupture tests—When the stress-rupture characteristics of a given steel have been established, it is felt that this test will provide a relatively short and convenient means for determining the comparatively high temperature characteristics of other steels of the same general type. For this purpose, tests of 200 to 300 hours duration should be sufficient rather than the years now required in conducting creep tests.

For example, it is believed logical to assume that if the logarithmic line, resulting from a plot of stress and fracture time, should lie above the one initially established, the second steel would possess the greater load-carrying ability. If, on the other hand, this line should fall below, the load-carrying ability would be inferior.

TABLE 1—RUPTURE STRENGTH (lb. per sq. in.) FOR DESIGNATED STEELS AT INDICATED TEMPERATURES

	Stresses for Designated Fracture Time, Hours				
	1,000	5,000	10,000*	40,000*	100,000*
	1,000 Deg. F.				
1015 (El)	12,800	8,800	6,800	4,000	2,800
1.25Cr+.50Mo+Si	46,500	26,200	20,400	13,100	9,000
2.0Cr+.50Mo+Si	19,500	16,300	15,000	12,800	11,750
4-6Cr+Mo	20,500	18,000	17,200	15,500	14,500
4-6Cr+Mo+Si	17,400	14,500	13,200	11,200	10,000
	1,100 Deg. F.				
2.0Cr+.50Mo+Si	11,000	7,900	6,900	5,200	4,400
4-6Cr+Mo	11,400	9,600	8,900	7,600	6,700
4-6Cr+Mo+Ti	9,300	6,600	5,800	4,300	3,500
4-6Cr+Mo+Si	10,250	8,200	7,500	6,100	5,400
	1,200 Deg. F.				
1015 (El)	2,500	1,500	1,220	800	600
1.25Cr+Mo+Si	7,000	4,700	3,950	2,800	2,200
2.0Cr+Mo+Si	6,400	4,800	4,250	3,300	2,800
4-6Cr+Mo	7,200	5,350	4,700	3,600	3,000
4-6Cr+Mo+Ti	5,000	3,800	3,350	2,600	2,200
4-6Cr+Mo+Si	6,200	4,900	4,400	3,600	3,150
	1,300 Deg. F.				
1015 (El)	1,400	870	720	480	.....
1.25Cr+Mo+Si	2,700	1,620	1,300	840	.....
4-6Cr+Mo	3,900	2,800	2,500	1,900	1,600
4-6Cr+Mo+Ti	2,800	2,100	1,900	1,480	1,240
4-6Cr+Mo+Si	3,700	2,950	2,650	2,100	1,850
18-8	9,100	6,600	5,800	4,500	3,700
	1,500 Deg. F.				
4-6Cr+Mo+Si	1,160	840	740	560	470
18-8	4,100	3,000	2,600	2,050	1,700

*Tests not necessarily conducted for given time period but actual slope of logarithmic lines believed to be sufficiently determined to establish stress values.

TABLE 2—RELATIONSHIP BETWEEN LONG-TIME RUPTURE STRENGTH AND CREEP STRENGTH

Steel—	Temperature Deg. Fahr.	Stress for Rupture in 100,000 Hr.	Creep Strength 0.01%/1000 Hr.	Creep Strength Rupture Str.
1015 (El)	1,000	2,800	2,700	0.964
1.25Cr+0.50Mo+Si	1,000	9,000	13,000	1.444
2.0Cr+0.50Mo+Si	1,000	11,750	5,700	0.485
4-6Cr+Mo	1,000	14,500	7,600	0.524
4-6Cr+Mo+Si	1,000	10,000	5,450	0.545
2.0Cr+0.50Mo+Si	1,100	4,400	2,400	0.545
4-6Cr+Mo	1,100	6,700	3,200	0.478
4-6Cr+Mo+Si	1,100	5,400	2,600	0.481
1015 (El)	1,200	600	290	0.483
1.25Cr+Mo+Si	1,200	2,200	1,080	0.491
2.0Cr+Mo+Si	1,200	2,800	1,400	0.500
4-6Cr+Mo	1,200	3,000	1,700	0.557
4-6Cr+Mo+Si	1,200	3,150	1,600	0.508
18-8	1,500	1,700	1,400	0.823

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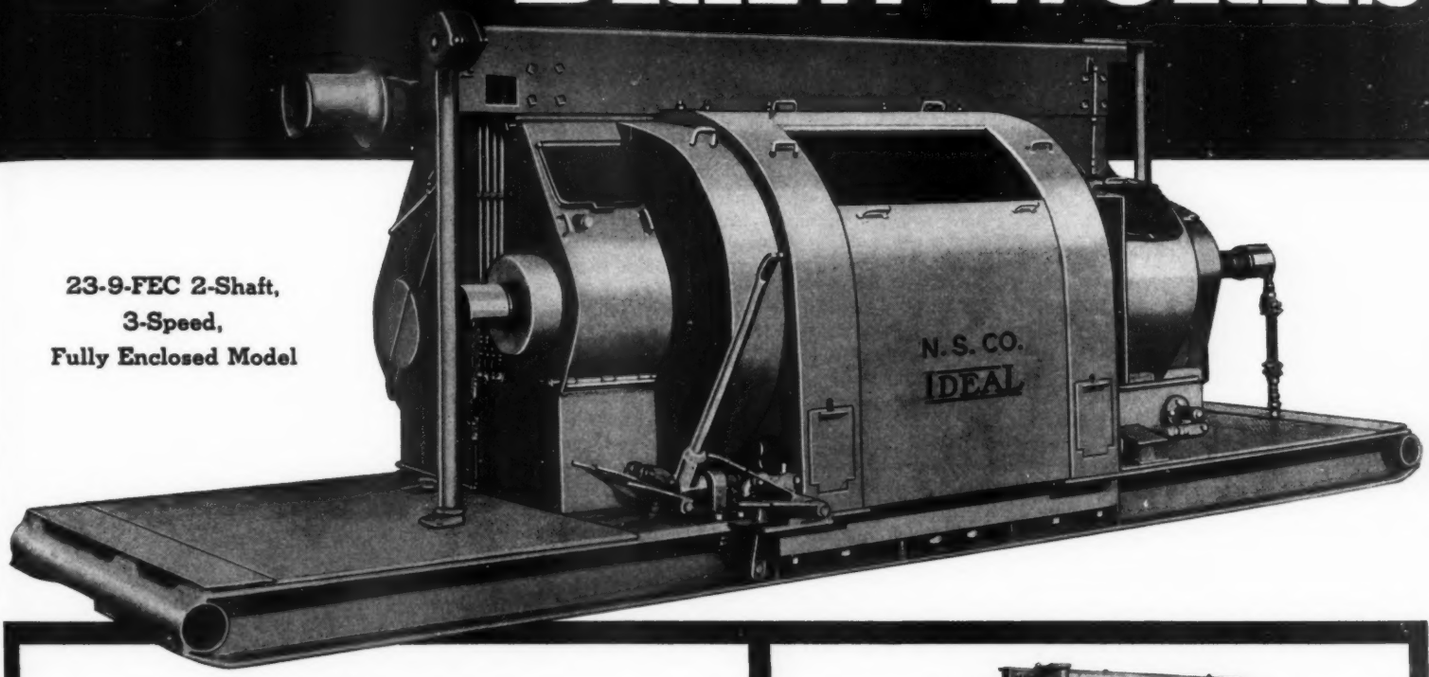

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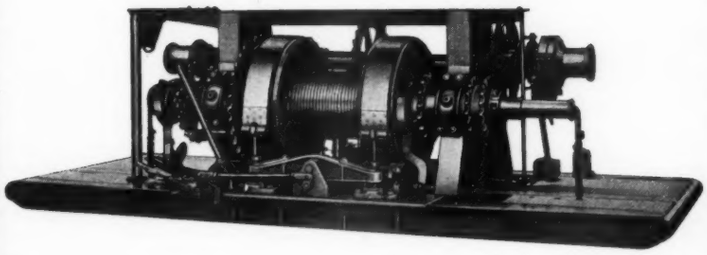

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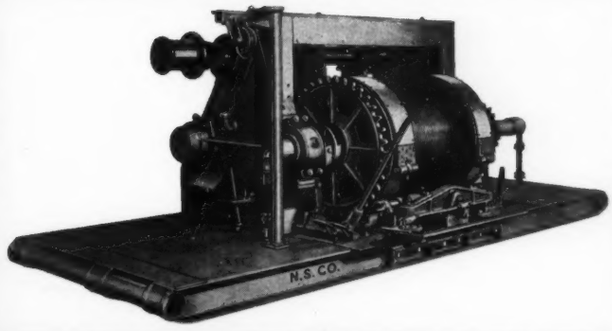

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Correct Lubrication of Natural Gas Compressors Important

By J. G. McLEOD
Manager Industrial Lubrication Oil Sales, Texas Co.*

The efficient lubrication of any piece of machinery requires a fundamental knowledge of the general laws of mechanics and thermodynamics coupled with a thorough understanding of the chemical principles involved. This constitutes a broad, comprehensive study of a field of engineering which deals specifically with the science of lubrication.

The basic theory governing all lubrication is that of the converging film, which also introduces the characteristic commonly known as viscosity. Naturally there are many other factors that materially affect the proper lubrication of equipment, but a detailed elaboration of these is not the function of this paper, and, therefore, only those which influence the correct lubrication of machinery in natural gasoline plants will be considered. No attempt will be made to present mechanical details except where they are particularly pertinent to the subject of lubrication.

As a matter of sequence, the lubrication of the gas engine will be considered first, and then those phases peculiar to the lubrication of the compressors will be presented.

The Gas Engine

This engine, as the prime mover and the key to the smooth operation of the plant, must be carefully and properly lubricated to attain the maximum efficiency. The most successful system of lubrication employed is that of mechanical force feed for the cylinders by means of a positive mechanical lubricator, along with a positive circulatory system for bearing lubrication. While splash systems are widely used for bearing lubrication, they are not preferable. Insurance against defective lubrication and resultant high maintenance and operating costs necessitates positive action at all times.

The selection of the best lubricants suited to the particular operating conditions will also determine the number required. Frequently, where load conditions are not severe, one oil will accomplish the objective economically and efficiently, but in many cases two oils are desirable for maximum results.

Oils used for circulatory systems involving bearing lubrication should possess certain very specific properties that are prerequisites for true economy. First, the oil must be of the proper viscosity to prevent metal-to-metal contact under operating temperatures and conditions, but not too high to increase, needlessly, the coefficient of friction, thus upsetting the balance of heat transfer and throwing an unnecessary load on the circulatory pump. Second, it must possess and retain a tough film, be highly resistant to oxidation, and drop extraneous material readily, as well as filter readily, with a good recovery. These qualities assure good lubrication provided the bearings are not subject to mechanical defects.

Cylinder lubrication makes much more severe demands on the oil chosen. Its characteristics must be such that it achieves an unusual chemical and physical balance. It must be highly resistant to oxidation factors, since an oil which oxidizes readily means stuck rings with the possibility of frozen pistons. It must deposit a minimum amount of carbon, and that which is formed should be practically nonabrasive to minimize cylinder wear. It must also be of the proper viscosity to protect adequately the moving surfaces at all times, but not too high so that the internal friction of the oil itself induces excessive heat even though a good film is secured temporarily.

There are certain pertinent operating factors that exert a direct influence on the ultimate results in cylinder lubrication. They are air leakage, improper cooling, and improper cleaning of the air used for combustion.

Frequently air is entrained in the gas used for fuel, which, if the quantity is sufficient, may cause preignition, with subsequent higher temperatures which impose severe demands on the oil. This causes breakdown of the oil regardless of the degree of refinement. Thus, excessive carbon is formed which may cause serious damage and subsequent operating delays.

Very few of the plants are equipped with facilities for treating the cooling water. Often the deposition of scale interferes seriously with effective cooling, which will definitely induce higher cylinder temperatures with subsequent destruction of the oil film, which again means excessive carbon deposits.

While most plant operators scrutinize carefully the air intake conditions, in many instances the capacity of the air cleaners is insufficient, which will cause breakdown of the oil, resulting in excessive cylinder and ring wear. When the analyses of used oils show a high ash content, poor air cleaning is clearly indicated.

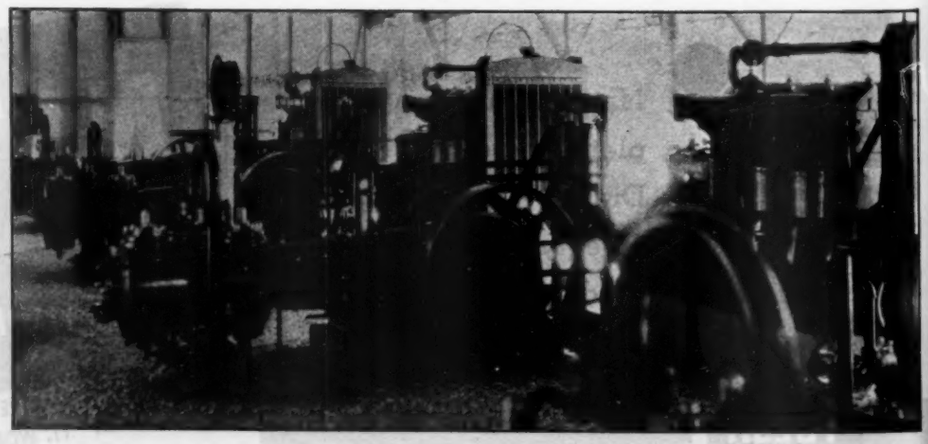
The amount of oil to be fed to the cylinders has long been a subject for discussion, but all engineers concur in the opinion that excessive quantities of oil fed to the cylinders may readily be the source of inefficient operation regardless of the quality of the oil. It is imperative that sufficient oil be fed to assure lubrication at the top of the cylinder, but careful observation of the exhaust will readily indicate excessive feeding. Naturally, if there is excessive feeding of the lubricant over a prolonged period of time, and material quantities of dust are also present, the operation of the engine is seriously impaired.

Compressors

The nature of the product subjected to compression is such that it presents specific problems that may readily render satisfactory lubrication very difficult. When the gas being compressed is rich in gasoline vapors, the latter acts as a cutting agent or diluent, especially in connection with straight mineral oils. Again, gas which is corrosive in its action, due primarily to sulfur being present in a corrosive state, will attack a straight mineral oil more readily than a compounded oil. However, dry gas operates best on a straight mineral oil.

Where wet gas containing an unusual quantity of gasoline vapors is encountered, a compounded oil containing from 3 to 4 per cent of prime lard oil is best adapted for the proper lubrication of the compressor as it resists the washing action to a far greater extent than straight mineral oil. Although a heavier-viscosity oil is desirable, the use of oils of more than 750 seconds at 100° F., Saybolt Universal, should be considered only after investigation has revealed that abnormal conditions exist. The deleterious effects of carbon deposits on the cylinder walls and valves are too serious to ignore

(Continued on Page 54)



Union Production Co.'s single-stage compressor station, used for gas-lift purposes, in the Rodessa fieldof Louisiana

*Read before March 10 meeting of California Natural Gasoline Association at Los Angeles, Calif.

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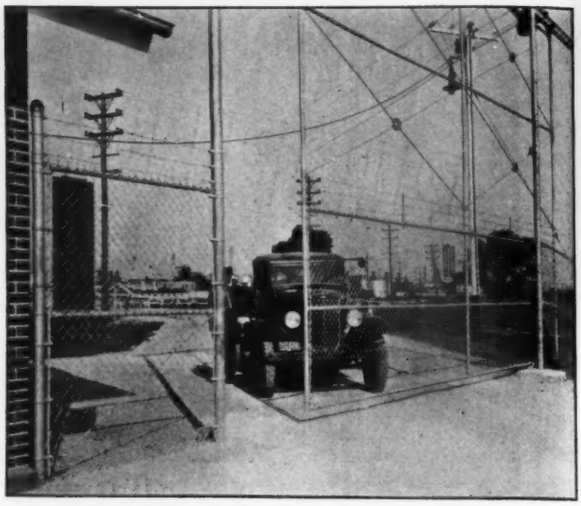
AND BRANCH STORES

Choice of Fencing Material Affected by Atmospheric Conditions

By
W. H. BLEECKER
Page Fence Association



Quick opening and durable entrances to oil properties are essential

Below the ground, "black gold" is where you find it. Above the ground, petroleum, its by-products and its processing plants are tangible, visible assets subject to many hazards against which adequate chain-link metal fencing will guard. Oil-industry fencing eventually costs nothing because its savings usually total more than the original fence investment.

An immediate and important saving is lowered fire-insurance rates. Insurance companies recognize that a well-fenced property is less subject to fires caused by trespassers than a property not so protected—and rates are adjusted lower accordingly. The wayfarer's carelessly thrown match lands far from danger where fencing is on guard.

Boundary fencing results in fewer claims for injuries. Fencing guards dangerous operations and railway loading points which might attract curious outsiders and lead to accidents which result in expensive damage suits.

Increase in usable space pays another dividend on the fencing investment. Equipment, supplies and products may be stored to the very limits of a fenced property, releasing valuable indoor space. In parking lots created by impregnable, unclimbable fence, the automobiles of employes and visitors rest undamaged, unmolested.

Protection during labor disturbances has paid in full for many a fencing installation. Fencing discourages sabotage and tampering—controls the movement of uncontrolled crowds.

The typical oil-property fence is metal chain link, 7 or 8 feet in height, topped by three strands of barbed wire held by extension arms attached to metal fence posts. Chain-link fencing may, however, run from 3 to 18 feet in height. The fence may be woven of wire ranging from the lightest gauge up to almost one-fourth inch in thickness. Or the complete fence may be a combination of all these various constructions, according to the requirements at various points in the boundary line. It can be engineered up, down or across any barrier or unusual boundary contours.

Science has made many forward strides in providing longer life for fencing metals. Also it has discovered that some metals have much longer life than others under the various destructive atmospheric conditions peculiar to different localities.

Such conditions include salt spray, sulfur, acid or other chemical fumes—often carried long distances in the air from neighboring ocean, mineral soils, chemical plants or factories.

Any consideration of industrial chain-link metal fencing should include a study of local atmospheric peculiarities and expert selection of the metal most resistant to prevailing chemical conditions discovered. Such a study usually results in adding many years to the effective life and appearance of the chain-link fence selected.

Typical fence around a large refinery

Available Fence Metals

Four chain-link fence metals meet a wide range of corrosive attacks by chemical-laden air. These metals include heavily galvanized copper-bearing steel and ingot iron, aluminum and stainless steel.

Copper-bearing steel fencing, protected by a sufficient weight of zinc galvanizing, is the most economical chain-link fencing in localities favorable to its use. Leading fence manufacturers today have set a minimum of 1.2 ounces of zinc coating per square foot as the least requirement for effective weathering protection, some recommending up to 2.4 ounces, double the minimum.

Time-tested, corrosion-resisting ingot iron chain link, also heavily galvanized, costs slightly more than steel and is specified for some conditions under which it has proved more resistant.

Aluminum woven-wire fencing combines to a high degree corrosion resistance, strength, low maintenance cost and high decorative value. Being composed of corrosion-resisting material throughout its thickness, no exterior coating, such as galvanizing or painting, is ever necessary.

Stainless steel is another fence metal possessing distinct superiorities. It provides a fencing of sheer beauty, immune to rust without protective coating—and with tensile strength four times that of low carbon steel. Lighter gauge stainless steel wire may therefore be used to secure strength equal to that of much heavier fencing metals.

When ornamental types of fencing are desired, wrought iron provides a superior material for pickets and decorative framework. Its durability is traditional. Numerous examples of wrought iron in the form of sea anchors, chains and lightning rods, some of them centuries old, show but little evidence of deterioration. If first-cost economy is imperative, ornamental steel picket fencing can substitute for the more costly wrought iron.

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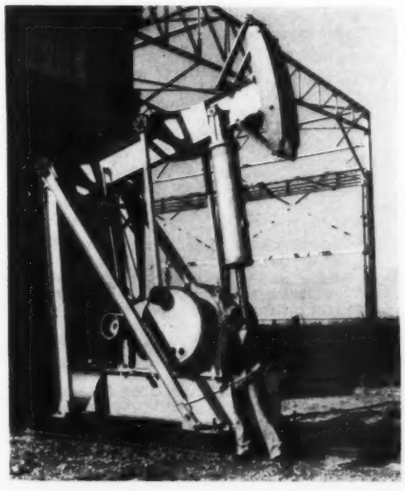

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Fundamentals Involved in the Design of Cracking Furnaces

By J. H. RICKERMAN, W. E. LOBO and A. L. BAKER
M. W. Kellogg Co.

Of all the tube-still heaters designed for use by the petroleum industry, the cracking furnace is probably the most important, and the one to which most attention must be given in order to insure the correct cracking conditions for long runs at the desired crack per pass (gasoline yield in per cent of furnace throughput). Such furnaces are commonly designed to process a large number of different types of charging stocks ranging from heavy reduced crudes, very heavy and light gas oils, paraffin distillates and kerosenes, to naphthas and gasolines to be reformed. More recently they have been applied to thermal polymerization work where temperatures and pressures may be even higher than in the usual cracking units.

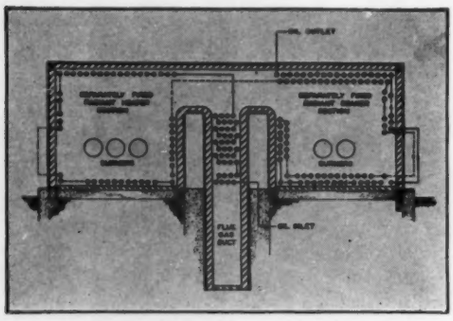

Fig. 1—Typical separately fired soaker section furnace

Each of these stocks must be heated and cracked under such conditions that coking in the tubes is eliminated, although each of them require entirely different time-temperature relationships, and possess entirely different maximum permissible heat densities and allowable cracks per pass. Due to the fact that a cracking unit ordinarily involves a relatively high investment cost, it is essential that a cracking furnace be designed for a reasonably long life with low maintenance cost. Much maintenance work results in expensive downtime, which ties up valuable equipment, and yields no product. Again, long runs should be obtained, as shutting down of the equipment for cleaning is costly. Even heavy coking of tubes during long runs is undesirable, as considerably more cleaning time will be required.

In order to design furnaces which will contain all the elements desirable in such a heater, close collaboration is necessary between the cracking laboratory and the process engineering designer, and between the latter and the men who know construction materials and their limitations. Practical experience in the field must be tied in with theoretical knowledge of the cracking characteristics of the stocks to be processed.

Calculation of Duty and Efficiency—The cracking furnace may be considered to be divided into three parts: the preheating or economizer section in which the oil is brought up to the initial cracking temperature; the heating section in which cracking begins, and in which the oil is heated rapidly approximately to the maximum temperature to be obtained in the furnace; and when no reaction chamber is used, the soaking section in which the oil is usually heated at a lower rate, and in which the final stages of cracking take place. These three operations may not be actually separated. It may be desirable in many cases to eliminate one or more of these sections. Certain types of cracking operations are best carried out by heating the oil to its outlet temperature at a high rate. In these cases no provision is made for soaking time, except for that automatically obtained in coming up to temperature.

Beginning with the importance of proper design the authors present a thorough discussion of the fundamentals of the design of cracking furnaces. In this first portion of their paper, presented before the spring meeting of the American Society of Mechanical Engineers, March 23-25, 1938, Los Angeles, Calif., process design, arrangement of heating surfaces, and heat distribution are discussed. In the second portion, to be published in an early issue of The Oil and Gas Journal, mechanical design of furnaces and their operation will be described.

The size of the preheating section is usually determined by the overall furnace efficiency desired. The overall efficiency for which a furnace is to be designed should be determined by the cost of the fuel to be fired. In most cases it is desirable to operate a furnace with a low percentage of excess air, in the range of from 10 to 25 per cent, so that the variable then determining the furnace efficiency is the flue-gas outlet temperature. From economic considerations this flue-gas outlet temperature may be set. In many cases high efficiencies are obtained only by the use of air preheaters, which permit low stack-gas temperatures to be reached. By their use, overall efficiencies as high as 80 per cent based on the lower heating value of the fuel may be obtained.

In the design of a cracking furnace, the first step is the calculation of the furnace duty. This must include the sensible heat required to heat the oil to the furnace outlet temperature as well as any latent heat for vaporization. In addition, as the reaction taking place in the heater will usually be endothermic, an item for the heat of cracking must be included in the calculation of furnace duty.

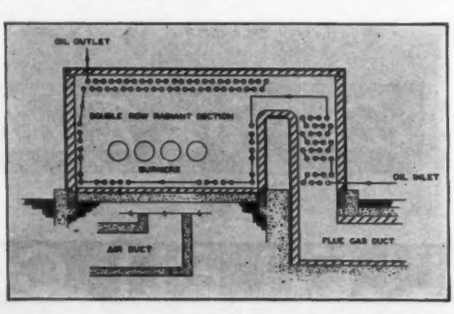

Fig. 2—Typical single radiant section furnace

Radiant Section—The size of the radiant section is set by the radiant rate desired. Experience has shown that a safe and conservative rate for cracking black oil is 10,000 B.t.u. per hour per square foot of outside tube surface, and for clean oil about 13,000 B.t.u. per hour per square foot. In many cases rates double the above have been successfully obtained, particularly in the zone where only a small amount of cracking has taken place.

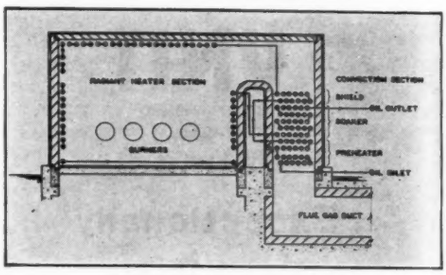

Fig. 3—Typical single radiant section furnace with convection section soaker

Having set the average overall radiant rate desired, use may be made of the empirical radiant heat equation of Wilson, Lobo and Hottel[1] for box type furnaces. This equation is:

$$\mu = \frac{1}{1 + G\sqrt{\frac{Q/A_c}{3200}}} \qquad (1)$$

in which

μ = fraction of the net heat, above atmospheric temperature, entering the chamber in one hour in the fuel, preheated air, and if any recirculated gas, which is transferred to the ultimate heat-receiving surfaces, in the chamber;
G = air-fuel ratio, or ratio of air plus recirculated flue gas, if any, to fuel, in pounds per pound.
Q = net heat in the fuel fired B.t.u. per hour.
A_c = total outside exposed tube area in sq. ft.

This equation is applicable only to furnaces having a single row of radiant tubes. For furnaces of other types, reference to the original article[1] should be made.

The item "G" in the equation is determined by the characteristics of the fuel to be fired, and the percentage of excess air to be used in the design. The value of "Q" is obtained simply by dividing the duty by the desired furnace efficiency. Given the desired overall radiant rate, in cases with no flue gas recirculation, the surface "A_c" to be used

to obtain that rate may be determined directly by using a slightly different form of the above equation in which "R" is the overall radiant rate assumed.

$$A_c = \left[\frac{G\sqrt{Q}}{6400} \left(\sqrt{1 + \frac{40{,}960{,}000}{G^2R}} - 1 \right) \right] \quad (2)$$

$$A_c = \left[\frac{\sqrt{Q}}{346} \left(\sqrt{1 + \frac{119{,}800}{R}} - 1 \right) \right] . \quad (3)$$

The tube surface having thus been determined, it is then necessary to decide on the size and length of tubes. It has been found that it is economical to place as much tube surface as possible in a given box volume. For this reason tube length should be chosen with the above fact in mind. Long tubes require more tube supports but fewer return bends, and so give less pressure drop than short tubes. The inside tube diameter should be chosen to give as high velocities as possible compatible with the allowable pressure drop. Where heavy stocks are being cracked, cold oil velocities of 6 to 8 feet per second or higher are recommended. Even with clean stocks it is believed that for a given heating rate higher allowable cracks per pass might be obtained if velocities are maintained high.

Convection Sections—With the known duty to be performed in the radiant section and allowing for radiation losses, a heat balance will give the temperature of the flue gases passing to the convection section. Heat is received by the tubes in this section from three sources. The first two rows of the section receive heat from the following sources:

1. Radiation from the hot flue gases and hot brickwork facing the tubes.
2. Radiation from the flue gases passing through the tubes.
3. Convection from the hot flue gases passing through the tubes.

The subsequent rows in the convection bank receive heat from the same sources, with the exception that under item 1 above, heat is received only from the walls adjacent to the tubes on either side. An equation for this "wall effect" has been given by Monrad in a previous publication.[3]

Radiation from the hot gases and hot brick surfaces may be calculated by the method of Hottel[3,4,5] use being made of the radiation charts for

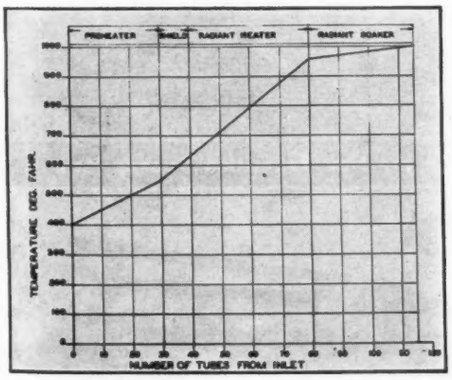

Fig. 4—Typical temperature gradient in separately fired soaker section furnace

carbon dioxide and water vapor. Convection coefficients may be calculated from the equation given by Monrad[3] in the above citation.

Soaking Section—Thus far there have been considered the two heating sections of the furnace. The section in which most of the cracking occurs has been termed the soaking section, and may be an entirely separately heated section, or may be an integral part of the heating section. It may, in many cases, be located as a second row of shielded tubes in the radiant section, or may be located in the convection section shielded from direct radiation.

Maximum flexibility may be obtained by locating the soaking section in a separately fired radiant section (Figure 1). By this arrangement the temperature of the oil entering this section may be regulated by the firing in the heating section combustion box, and the final transfer line temperature, by the firing in the soaking section box. For a given maximum transfer line temperature, additional effective time may be obtained simply by firing the heater section somewhat harder. The temperature of the oil entering the soaker section should depend upon the total soaking volume required. The larger the required volume the higher the inlet temperature should be to this section. The oil duty performed in the soaker section will be the sensible heat duty for that section, plus the heat of cracking for that portion of the cracking performed within the section. Radiant rates usually cannot be as high in the soaker as in the primary radiation section. The allowable heat transfer rate will be a function of the characteristics of the stock, the velocity, the crack per pass, and the limiting tube wall temperature.

In order to obtain the required volume, and keep the radiant rate down, in those cases where a considerable heat load is assigned to the soaker section, it may become necessary to resort to smaller tube sizes, as the ratio of surface to volume is

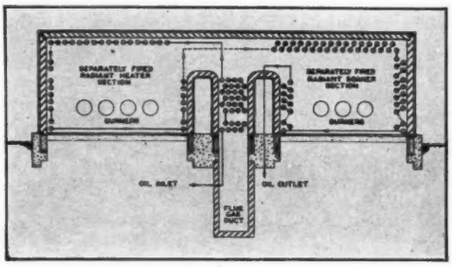

Fig. 5—Typical separately fired soaker section furnace with staggered tubes

then greater. Where separately fired soaker sections are used following a heating section, in which only a small or negligible amount of cracking has been done, it is possible, and even economical, to design the heater section for considerably higher overall radiant rates. However, this type of design is particularly advisable when various types of cracking stocks are to be processed. In general, however, due to the additional structure usually required, a furnace with a separately fired soaker is more expensive in first cost than one in which such flexibility is not incorporated.

Soaking sections may be located in the primary radiant section as a shielded row of tubes (Figure 2). These tubes are placed behind the main heating tubes and thus receive heat at much lower heat densities, approximately 35 to 45 per cent of the first row rate. Such location has the advantage of making for a more compact furnace with soaking tubes easily accessible and visible. It also permits the arrangement of heating surface in such a manner that decreasing heat densities may be obtained as the oil is progressively cracked.

Soaking sections located in the convection bank may also be used (Figure 3). These provide a very compact means of installing the necessary tube volume, and in most cases result in giving a design with the lowest investment cost. Where use is made of this arrangement, care should be taken that the heat density is sufficiently high to insure against a falling temperature gradient.

Pressure Drop—The pressure drop which will result when heating and cracking an oil in a furnace under definite conditions of temperature and pressure is of importance in selecting the furnace charge pump, as well as in choosing the proper thickness and material for tubes and headers. Calculations must consider the amount of vaporization, and the products made, as well as estimate their approximate rate of formation throughout the

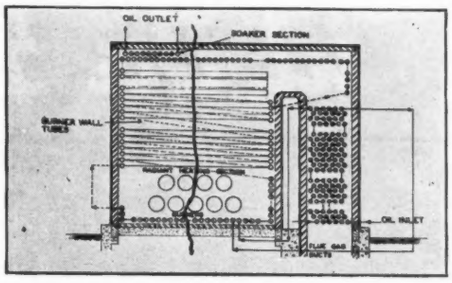

Fig. 6—Typical single radiant section furnace with tubes on all sides

heater. The compressibility of the vapors and their deviations from perfect gases are involved, and consequently fairly complete correlations of the physical and critical properties are necessary.

Arrangement of Heating Surfaces

The required amount of tube surface may be arranged in a furnace in a number of different ways. In the radiant section of the more or less conventional box-type furnace there are six surfaces, including roof and floor. Study has shown that the cheapest location for tubes is the roof, followed by the floor, outer wall, bridgewall, and burner walls, respectively. In other words, for a given furnace box volume, heating surface may be progressively installed on roof, floor, etc., as the furnace duty is increased. Consequently, before the box size should be enlarged, all the available wall surface should usually be utilized as heat absorbing surface (Figure 6).

Convection sections may also be located in a number of different places. Advantageously, they can be built above the radiant section, either in the middle, or in one end, (Figures 7 and 8). Such construction often eliminates the need of an expensive bridgewall construction, as well as all flue gas ducts when the stack is located on top of the convection section. When two separate cracking coils are included in the design of the unit, savings may be made by making a single two-coil furnace, each coil having its own separately fired and controlled radiant section, (Figures 9 and 10). In other cases where separately fired soakers are desired for each stream, two separate furnaces may give a more desirable layout.

Heat Distribution

Importance and Effect of Heat Distribution—The heat distribution occurring in any furnace box is of prime importance from the standpoint of successful operation. Flame impingement, or localized overheating, will result in the coking of furnace tubes, and in tube ruptures. Again, along the length of any tube, it is desirable and necessary that the heating be uniform, and not concentrated in one or two small sections of the tube. Even where good distribution along the length of the tubes is achieved, the design of the furnace must consider the relationship between the heat densities in the various tubes of the furnace.

Location of Heating Surface

Method of Obtaining Heat Distribution—The location of the heating surface in the combustion chamber of any furnace will affect the distribution of heat. Symmetrical arrangement of tubes around the surface of a box would result in uniform distribution of heat if the source of heat and of radiation were symmetrical to the heating surface. Due

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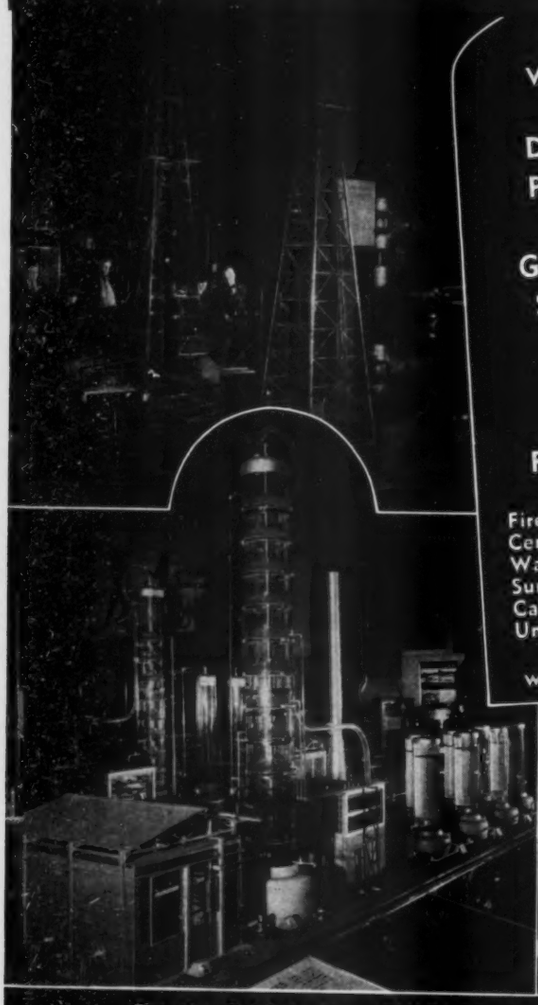

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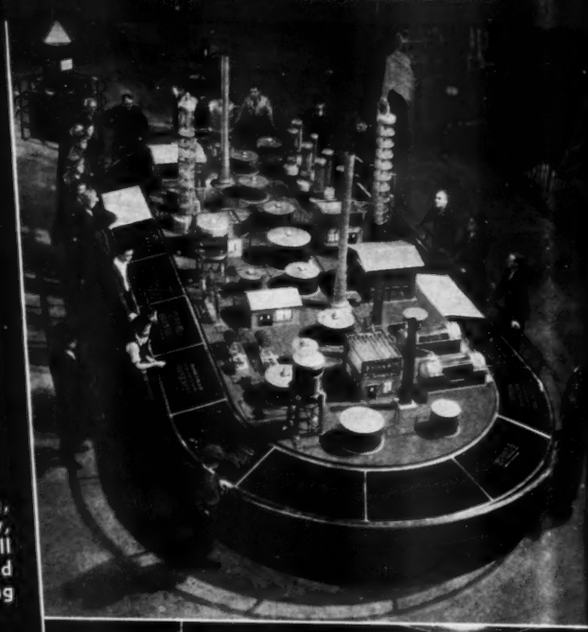

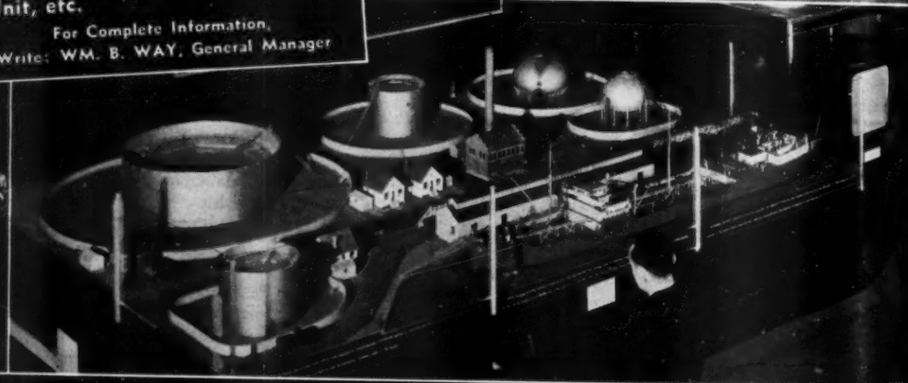

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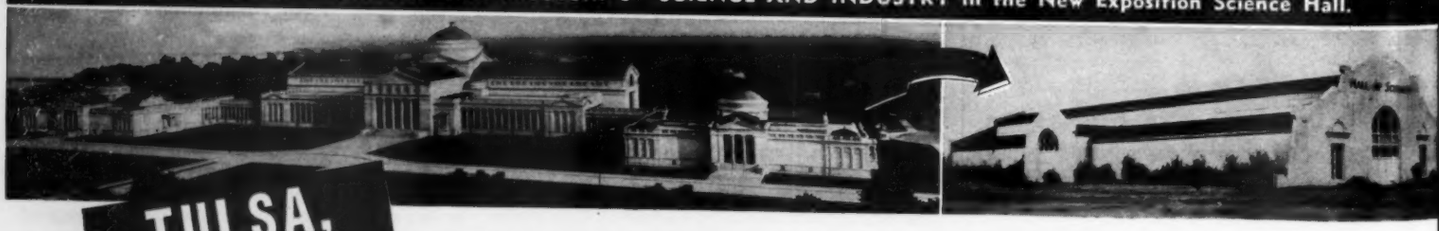

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to the fact that perfect symmetry is very difficult to attain in practice, perfect symmetry of heat distribution is more or less impossible. For this reason care must be taken in the location of heating surface relative to burners and exit flue gas passage. Again, in a given box where all the inside box surface is covered with tubes, there will be less variation in heating intensity to the various portions of the cold surface, due to re-radiation from hot radiating surfaces. In a radiant section in which tubes are located on roof and one wall only, roof tubes will receive re-radiated heat from floor and three hot walls, and the single wall with tube surface disposed on it will receive re-radiated heat from the same surfaces. However, due to the difference in location of the two cooled walls with respect to the re-radiating walls, the heat intensity to the two heat-receiving surfaces will be different.

Perfect heat distribution, i.e., equal heat pick-up by each foot of tube surface in the furnace box, is not essential, nor in many cases desirable. As pointed out before, the allowable heat density varies with the temperature-pressure-volume conditions, and it may be eminently desirable to have a higher heat density at the start of the heating cycle, and a lower one as the end is approached. Consequently, the oil flow should be such that it takes into account the fact that in a given box there may be unequal heat distribution. However, it is obvious that where a high rate of heating is permissible, the heat distribution should be such that all tube surfaces are working to best advantage, and where only lower heat densities are desired, no section of the tube surface should be exposed to a higher than the allowable rate.

The attainment of good or desirable heat distribution in any furnace is not an easy thing. It is dependent on many variables such as the location of the heating surface, the characteristics of the burners and their location, and on the furnace draft conditions. It can be said that in general, refinery cracking furnaces are operated with poor

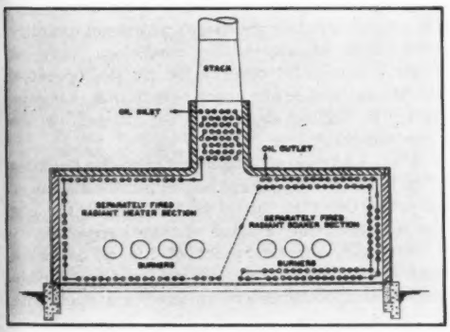

Fig. 7—Typical double radiant section furnace with central overhead convection and separately fired soaker

combustion conditions. Considerable study of this subject in the last few years has yielded a large amount of important information relative to the conditions necessary for good heat distribution.

Combustion—In the heating of oil to cracking temperatures, the relation of combustion and the burning of fuels to the major subject of heat distribution may not be treated abstractly. Certain aspects of combustion which apply when generating steam for example, must be modified in applying the combustion of fuels to an oil heating process. Unlike the steam generator, wherein the water is, in effect, an infinite heat absorber, an oil heating furnace may not only raise the temperature of the oil to a given point but may also subject the hydrocarbons being heated to thermal decomposition during which the rate of heat input must be closely controlled. As a result, the creation and maintenance of combustion conditions peculiar to a given oil heating or cracking process is usually required.

Faulty combustion may cause impingement of flame on floors, walls, or tube surfaces; lack of control of the flame and combustion gas path, damage to tubes and hangers, high maintenance costs, dangerous and destructive fires, faulty process operation due to local overheating of the charge, resulting in loss of time on stream and other serious operating and maintenance difficulties. Incorrect adjustment of, or inability to control the air

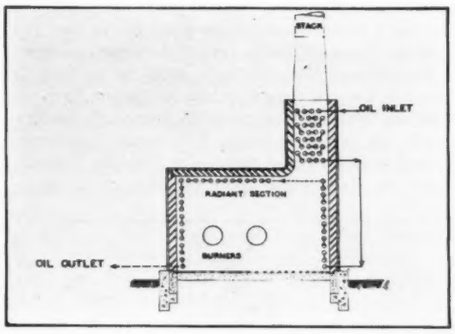

Fig. 8—Typical end overhead convection section furnace

and fuel results in an imperfect mixture of fuel and air and unevenness of flame pattern.

Ideal conditions for combustion are realized when fuel, adequately mixed with air, burns under conditions that may be controlled, at will, to give an oxidizing or reducing furnace atmosphere, a long or short flame and controlled flame temperature and flame pattern. In an elementary sense, with any fuel, the combustion problem is the same, i.e., the production of a uniform, thoroughly intermingled, combustible mixture of fuel and air, the raising of this mixture to the ignition temperature, and the comblete combustion of this mixture by providing adequate combustion space.

When gas is the fuel, proper mixing becomes a function of burner and air register design, gas pressure, air pressure and volume, constancy of gas composition and heating value. When fuel oil is the medium of heat supply, satisfactory combustion requires that the fuel oil must first be changed by complete vaporization into a gaseous hydrocarbon fuel to be properly and completely burned. Complete, smokeless combustion of these gaseous hydrocarbons will result only if they are brought into intimate contact with sufficient oxygen, and if the mixture is kept at a high temperature for sufficient time to allow the oxygen to react with the hydrocarbons. On the other hand, in the absence of these conditions the hydrocarbons may crack yielding carbon (soot) with a smoky flame as the result.

In addition to the elements necessary for ideal combustion cited above, an additional furnace condition, proper draft, is also of vital importance. No matter how accurately other conditions may be controlled, the draft in the furnace, if variable, has a profound influence on uniformity of combustion. As the heat input rates in furnaces are raised above present levels, the adoption of automatic draft control will undoubtedly be desirable and in certain cases obligatory if optimum heating results are to be obtained.

Burners—In order to approach the conditions outlined for the ideal combustion of gas fuel, a completely satisfactory gas burner must be constructed to contain the following features:

1. An inlet connection to the burner gas tip or spud which ensures equal pressure at all outlet orifices with a minimum pressure drop.

2. An orifice or spud arrangement which produces a gas pattern designed to mix with the air inlet pattern in the most intimate manner, at the maximum velocity and in the desired time. The gas velocity, in the tips, should be high enough to prevent cracking of the gas in the burner.

3. An air register capable of producing an air inlet pattern to meet the same conditions as obtained for the gas pattern. This register should be controllable over the entire range of zero to maximum air flow and should be designed to maintain the maximum velocity of mixing at minimum turn down operation. Rotational velocity should be controllable at constant air quantity.

4. The relative arrangement of gas and air patterns should be such as to provide maximum velocity of mixing in minimum time. During actual combustion, provision should be made for rapid expansion of heated gases. During mixing, combustion should be at a minimum and after combustion, the velocity of the gases toward the furnace center should likewise be a minimum. In the combustion zone proper turbulence should be a maximum to insure proper hot gas distribution in the furnace.

5. Materials of construction employed in the manufacture of the burner should be capable of withstanding heat radiated from the furnace with no air or gas flow through the burner and without any form of special protection for any part of the burner.

A burner designed to burn oil should also possess the following characteristics:

1. The oil atomizing gun should be adjustable in position so as to utilize the air pattern to the fullest advantage.

2. The oil burner parts exposed to the fire should be capable of with standing heat when the oil burner is not being used, without withdrawal of the gun.

3. Operation of the oil burner should not interfere in any way with operation of the gas burner. The oil gun should be placed so that any oil dripping from it will not accumulate and carbonize on the gas ports.

4. Both gas and oil fuels should be available for

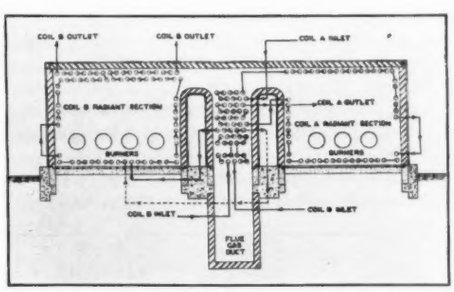

Fig. 9—Typical double radiant section double coil furnace with conventional convection section

instant and simultaneous use in burners designed to burn both fuels.

5. It is desirable that either the gas spuds or rings or the oil gun may be arranged for removal from the burner without intereference with burner operation on the other fuel.

Combination gas and oil burners, as offered by various manufacturers, may be divided into four basic types: (1) Premix; (2) Semi-premix; (3) Throat mix; (4) Furnace mix.

We shall be concerned only with the throat mix type of burner in this report as it probably is the most commonly used type. Figures 11 and and 12 are typical photographs of such burners. In this type of burner, fuel and air are introduced in a throat of metal or tile just prior to release into the furnace. All mixing of air and fuel is intended to be completed in or adjacent to the throat. This type of burner may be made in all practical sizes and is not subject to the hazard of back-firing as

is the premix or semi-premix types of burners. Ignition takes place in or near the throat area and is sometimes assisted by surface effects in the throat surface. This type of burner offers a good combination of those desirable qualities which should be incorporated in a burner for oil heating service. The best combustion engineering knowledge in the detail design is necessary, however, as the mere use of this principle will not, of itself, be productive of the desired results.

The dual adjustable air register is peculiarly suited to the center fired gun type burner. This register permits adjustment of the general position of the vanes, with respect to the fuel gun location, without interference in any way with the adjustment of the vanes themselves. It possesses the following advantages:

1. The register itself may be adjusted close to the fuel gun tip, so as to obtain maximum efficiency of the directing air vanes.

2. The multiple vane register gives a maximum rotational velocity to the air during the mixing period, thus giving maximum flexibility of operation.

3. With forced draft, vanes may be adjusted to give varying degree of rotational velocity, for any given quantity of air, thus increasing flexibility.

4. Vane position, with respect to fuel gun position and type of fuel, may always be maintained at the optimum relative location, which permits the burner to operate over wide range of capacity and fuel values.

In order to obtain the fullest advantage of the burner characteristics, it is essential that the burners be mounted in the heating furnace with proper regard for clearances from heating surfaces. In this connection, the following provisions are usually incorporated in each case: (1) Minimum centerline distances from floor tubes, side wall tubes, walls, roof tubes and bridge walls are set and rigidly adhered to for each type and size of burner. (2) Direction of rotation of the air for all burners in one side wall is similar and always arranged so that the movement of air at the top of the burner is away from the bridgewall or furnace gas exit. Thus burners on opposite walls are on opposite-hand rotation when viewed from front of the burner. (3) Burners on opposite walls firing towards each other are staggered horizontally and occasionally are staggered vertically if the arrangement requires it.

It is essential to obtain an accurate and symmetrical combusition pattern, as slight variation in manufacture or drilling of the burner tip will cause objectionable tongues of flame or hot gases which may impinge adjacent tube surfaces.

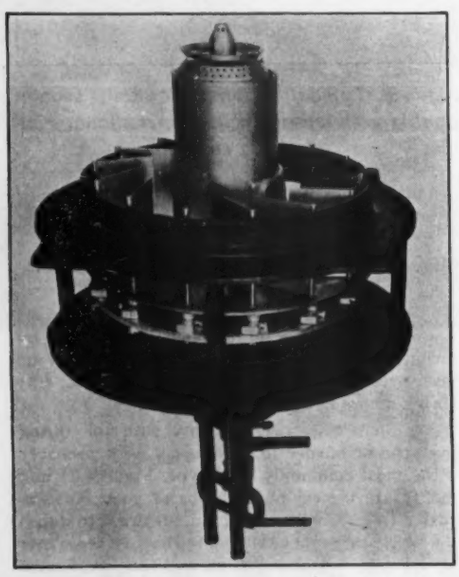

Fig. 11—Throat mix burner for gas and oil fuel, with dual adjustable register

In all burner operations, the importance of the general principle of operation with controlled and usually, minimum excess air under all conditions cannot be over-emphasized. Use of excessive air to obtain proper combustion starts a vicious cycle which causes trouble throughout the furnace. It is our opinion that it is practical and very desirable to operate suitably designed oil heating furnaces in the range of 10 to 15 per cent excess air based on actual weighted averages of flue gas samples taken during a proper furnace traverse.

Forced and Natural Draft—Control of draft is essential for good combustion conditions because draft variations and unsuitable furnace pressures may cause adverse flame or distribution characteristics. The draft at the furnace flue gas exist point should be steady and be maintained at the minimum possible negative pressure at the highest point in the furnace. Furnaces equipped with forced draft may be operated at or just below atmospheric pressure at this point, for all capacities and excess air conditions because the burners are not dependent on the furnace negative pressure for induction of air supply. Under these conditions the infiltration of air into the setting will be a minimum. This will permit proper circulation of the hot gases to all parts of the heating surface and particularly to the ends of furnace tubes where the maximum air leakage would normally occur under higher draft conditions. In addition, the furnace will operate at maximum efficiency, burning the least fuel for any given set of conditions and thus reducing to a minimum the velocity of flue gases from the burners, in the central portion of the setting.

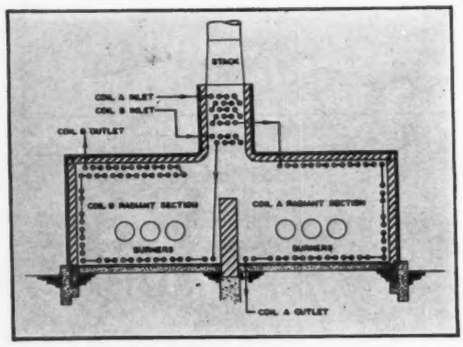

Fig. 10—Typical central overhead convection section furnace with two coils

Under natural draft conditions it may be necessary to carry slightly lower pressures in the furnace so as to induce the proper air supply through the burners. It is still advantageous to carry the minimum negative draft as leakage of air through tube sheets also causes some tube cooling and the infiltration of air forces the hot gases to the center of the furnace thus materially raising the temperatures at that point. This minimum draft may be obtained best through the use of a controller.

Draft may be controlled automatically by power cylinder operation of the flue gas outlet damper to the stack. The usual method impresses the furnace pressure on one side and atmospheric pressure on the other side of a sensitive diaphragm. Movement of the diaphragm operates a pilot valve which in turn controls the power cylinder action. The power cylinder may be operated by air, water, oil or electricity. This equipment is simple and requires little maintenance when properly installed.

With the controller in operation, changes in wind, fuel and excess air conditions will not affect the furnace pressure which will readily be held within ± .01-inch water. Present furnaces are usually supplied with draft controls except where first cost of equipment is a paramount consideration. As many types of controllers are available, ranging widely in price and value, the designer selects the control instrument with a view to supplying a type similar in ruggedness, flexibility and materials to the general furnace design.

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CORRECT LUBRICATION

(Continued from Page 46)

when too heavy-bodied oils are used. The use of an oil compounded with lard oil is also advantageous when corrosive sulfur is affecting the economical maintenance of the plant.

Dry gases when compressed do not have any cutting action on the oil and, therefore, a highly refined straight mineral oil is employed to best advantage. A straight mineral oil which has been properly refined will not deposit as much carbon or gum and thus is better suited to the efficient lubrication of the compressor. The viscosity of the oil varies considerably, but ordinarily the range is from 300 to 750 seconds, Saybolt Universal, at 100° F., although the justifiable use of an oil in excess of 500 seconds is rare.

The underlying cause of improper lubrication, where carefully refined oils of the proper viscosity have been used, is excessive oil feed. Unfortunately, it is not possible to state specifically exact quantity ratios since the operating conditions vary so widely, but careful observation by the operator, with the assistance of a competent lubrication engineer, will readily determine the setting of the force-feed lubricator.

While I have dealt in general with the qualities of the oils involved, I have not emphasized some of the properties that should be inherent in the oils used and the relative value of these properties.

Generally, the flashpoint of the oil is not a factor and should be considered only when compressor temperatures encountered are such that partial distillation could take place. This condition, of course, should be eliminated as soon as it is practical to do so, as the source is generally bad overloading or improper cooling.

The term "carbon residue" is used rather loosely at times and, being an empirical test, deserves clearer definition. While two oils may show the same per cent of carbon before use, the tendency of these oils to break down and form carbon or gummy deposits is not apparent from this particular test and, therefore, undue stress is sometimes placed on this characteristic without giving ample consideration to the degree of refinement which the oil has undergone, the latter being the major consideration.

The deleterious effect of the use of too high-viscosity oils to compensate for mechanical defects or inequalities cannot be underestimated when compared with increased maintenance costs.

Only the more salient points that deal with the lubrication of gas engines and gas compressors have been presented, since the field is broad and the problems encountered vary widely; consequently there are many phases which have not been covered in detail.

QUESTIONS ON TECHNOLOGY

By Charles K. Francis, Ph. D., Technical Editor

Proposed Revision of Federal Specifications For Fuel Oil

We are informed that a revision of the specifications concerning domestic fuel oils has been adopted. If you have the information will you kindly furnish the details of the requirements for this class of oils?—D. S. R.

The National Bureau of Standards, Division of Trade Standards, has prepared, with the cooperation of the American Society For Testing Materials, a revision of the Commercial Standard C.S. 12-35 for Fuel Oils. The date for adoption has not been announced.

The essentials of the requirements are shown in the table.

SPECIFICATIONS FOR FUEL OILS[A]

Fuel oils[B]— No.	Description	Flash-point Min./Max.	Pour-point Max.[C]	Wtr. and sediment % Max.	Carbon residue (per cent) Max.	Distillation— 10% point Max.	Distillation— 90% point Max./Min.	Viscosity Saybolt Universal, at 100°	Viscosity Saybolt Universal, at 122° Max./Min.
1.	A distillate oil. Volatile fuel	100/165	15	Trace	0.05 on 10% bottoms[D]	410	(Endpoint) (see [E])	....	.....
2.	A distillate oil. Moderately volatile fuel	110/190	15	0.05	0.25 on 10%[F] bottoms	440	600	....	.....
3.	A distillate oil. Low viscosity fuel	110/230	20	0.10	0.15 Straight	...	675/600[G]	Max. 55	.....
5.	A medium viscosity fuel	130	..	1.00	(Ash 0.10% Max.)	...	.....	Min. 60	40
6.	A high viscosity fuel	150	..	2.00[H]	(All temperatures are °F.)				500/45

A. Recognizing the necessity for low sulfur fuel oils used in connection with heat-treatment, nonferrous metal, glass and ceramic furnaces and other special uses, a sulfur requirement may be specified in accordance with the following table:

Grade No.	Sulfur max., (per cent)
1	0.5
2	0.5
3	0.75
5	No limit
6	No limit

B. It is the intent of these classifications that failure to meet any requirement of a given grade does not automatically place an oil in the next lower grade unless in fact it meets all requirements of the lower grade.

C. Lower or higher pourpoints may be specified whenever required by conditions of storage or use. However, these specifications shall not require a pourpoint lower than 0°F. under any conditions.

D. For use in other than sleeve type blue flame burners carbon residue on 10 per cent bottoms may be increased to a maximum of 0.12 per cent. This limit may be specified by mutual agreement between the buyer and seller.

E. The maximum endpoint 560° may be increased to 590° F. as under D.

F. To meet certain burner requirements the carbon residue limit may be reduced to 0.15 per cent on 10 per cent bottoms.

G. The minimum distillation temperature of 600° F. for 90 per cent may be waived if A.P.I. gravity is 26 or lower.

H. Water by distillation, plus sediment by extraction. Sum, maximum 2 per cent. The maximum sediment by extraction shall not exceed 0.50 per cent. A deduction in quantity shall be made for all water and sediment in excess of 1 per cent.

Ten-01 Compound an Additive For Improving Diesel Oils

Can you furnish some information covering the character of and the use made of an oil improver sold under the name Ten-01?—B. C.

A. C. Vobach and M. Fairlie reported before the second World Petroleum Congress the preparation and investigation of Ten-01 diesel lubricant used to increase the viscosity index of a lubricating oil and to reduce cylinder wear and ring sticking in the diesel engine. The material here is based on their paper.

Fairlie had previously shown in The Oil and Gas Journal that under test conditions highly refined paraffinic oils were superior to naphthenic oils in preventing ring sticking. Despite a 10 to 1 ratio in tar formation by naphthenic as compared to paraffinic oil, the ratio of ring sticking was only 2 to 1 in favor of the latter.

The paraffinic oxidation products were gummy, lacquer-like, while the naphthenic oils formed dull carbonaceous residues. The quality of the oxidation products made the naphthenic oils show to disadvantage. In a diesel lubricant the type of carbon deposit formed with a paraffinic base oil should be made more friable and more like that resulting from the decomposition of a naphthenic oil, or naphthenic oils should be made more resistant to sludging without change in paraffinicity, with the favorable tendency to form soft coke. Also, improved oiliness was considered essential.

An additive named Ten-01 was prepared, a very complex compound which cannot be described in exact chemical terms. The preparation of the compound is described as follows:

"One part of an unsaturated aliphatic acid and two parts of an aromatic hydrocarbon by volume were reacted at 135-150° F. with anhydrous aluminum chloride, the reaction product washed free of sludge with HCl, and then by distillation with steam, excess solvent was first removed and then an overhead material removed amounting to 70-80 per cent by volume of the original fatty acid. This overhead was mostly a substituted fatty acid, plus some saturated aliphatic acids contained in the original fatty acid.

"The overhead acid cut was blended with oil before saponifying with lime, and then this concentrate diluted with additional oil to a final product containing 1 to 2 per cent of lime soap."

LABORATORY TESTS ON TEN-01 DIESEL

	S.A.E. base oil	Ten-01 diesel lubricant S.A.E. 30
Gravity, ° A.P.I.	21.0	20.9
Flash, O.C., ° F.	365	360
Fire, ° F.	425	420
Vis. at 100°, S.U.	493	509.5
Vis. at 210°, S.U.	53.5	58.5
Viscosity index	21.8	66.1
Pour	—10	—10
Carbon residue, per cent	0.019	0.176
Ash, per cent	0.000	0.113
Neutralization No.	0.029	0.261
Saponification No.	0.036	2.080
Color, N.P.A.	3—	4—
Iodine No.	22.0	22.5
Coke test	N.G.—hard	OK—friable
Sludging time, hours	13.5	28.5

The references contain further details and are fully illustrated.

Vobach and Fairlie, "A New Diesel Lubricant Using Ten-01 Compound," Second Congress Mondial du Petrole, Paris (1937), Tome III, p. 458.

Fairlie, "The Laboratory Testing of Motor Lubricants." The Oil and Gas Journal, March 19, 1936, p. 114.

CHEMICALS FOR THE PETROLEUM INDUSTRY

Silicate of Soda

Use—Rotary drilling, corrosion preventative, catalyst, water purification, concrete treating, and cleaning.

Form—Liquid, soluble hydrous, powders, glass.

Formula—Na_2SiO_3.

Specific gravity—Liquid, 1.25 to 1.75. Powder (apparent), 0.6 to 1.4.

Melting point—Hydrous solids, above 120° F. Anhydrous solids, 1,990° F.

Freezing point—Liquids all below 20° F.

LIMITATIONS

Liquids—Gravity, alkali and total solids according to grades.

Glass—Na_2SiO_3, minimum 99 per cent.

Sulfur Dioxide Properties Cause Protective Respiratory Reflex

Is it true that dangerous quantities of sulfur dioxide cannot under ordinary conditions be breathed? This has been explained that the action on the throat and lungs prevent serious quantities from being taken into the body.—S. R. K.

Sulfur dioxide is a toxic gas under conditions where one should not escape to the open air. The gas has a characteristic odor, burning sulfur, which gives ample warning of any possible danger. High concentrations cause a reflex of the respiratory system which prevents dangerous volumes from being inhaled. A quantity so low as 3 parts per million, or 0.0003 per cent, in the air is easily detected by the odor, but 7,000 parts per million, 0.7 per cent, would be difficult to breathe and would probably suffocate an injured or confined person. The irritation to the eyes and the breathing system is enough to warn of dangerous concentrations.

The emergency treatment includes removal to the pure air and inhalation of the vapor from ammonium carbonate or dilute ammonia water. When the eyes are involved dashes of water followed by applications of castor oil, petrolatum or lubricating oil are recommended.

Crude Oil From Val Verde and Edwards County, Texas

Can you furnish details covering the composition of the heavy oil recently reported as found at a shallow depth in Val Verde County, Texas?—Y. S. D.

An oil is produced at 310 feet in Val Verde and Edwards counties, Texas, which is among the heavy oils of the United States. The properties of this oil are shown in the table:

VAL VERDE AND EDWARDS COUNTIES, TEXAS, OIL

Gravity, A.P.I.		17.0
Sulfur, per cent		3.43
Color		black
Distillation:		
Initial boiling point, °F.		275
Per cent off:		
5		400
20		508
50		594
65		640
Product—	Gravity	Per cent
Gas oil	31.5	25
Lubricants	20.0	40
Residue	10.6	35

The shallow wells completed in this area yield a heavy black oil from a soft sand reported to be about 12 feet thick.

PROBLEMS FROM READERS

Edited by L. G. E. Bignell

Difference Between Baume and A.P.I. Gravity

Is Baume gravity the same as A.P.I. gravity? Please give definition of each unit of measurement and some comparative table showing differences.—V. E. S.

Specific gravity is the ratio expressed as a decimal, between the weight of any volume of the substance at 60° F. (in vacuo) to the weight of the same volume of pure water at 60° F. (in vacuo).

Baume gravity, Bureau of Standards (modulus 140) is expressed in degrees on the Baume scale for liquids lighter than water. It is based fundamentally on true specific gravity as defined above, according to the following mathematical relations:

$$\text{Degrees Baume (B of S)} = \frac{140}{\text{Sp. gr. } 60°/60° \text{ F.}} - 130$$

A.P.I. gravity, Tagliabue (modulus 141.5) is a variation from the Baume scale for liquids lighter than water. It is based upon the following relation to true specific gravity:

$$\text{Degrees A.P.I.} = \frac{141.5}{\text{Sp. gr. } 60°/60° \text{ F.}} - 131.5$$

Therefore Baume gravity is not the same as A.P.I. gravity, and to give some idea of the differences the following comparison of three gravity scales for petroleum products is given.

Specific gravity 60°/60° F. (in vacuo)	Baume gravity (modulus 140)	A.P.I. gravity (modulus 141.5)
1.0000	10.0 deg.	10.0 deg.
0.9333	20.0	20.1
0.8750	30.0	30.2
0.8235	40.0	40.3
0.7778	50.0	50.4
0.7368	60.0	60.5
0.7000	70.0	70.6
0.6667	80.0	80.7
0.6364	90.0	90.8+
0.6087	100.0	100.9+

Flow of Fluid Through Chokes

I would like to know if anyone has done any work on the rate of flow of oil through chokes of the same size, but varying in length, also varying in style from the straight positive to those having a flare or bell on the down-stream side. If such work has been done please send me the name of the man or men who have worked on this problem and also tell me where I may obtain copy of results.—J. J. M., Jr.

We know of no published results of investigations of flow of fluid through chokes such as you outline in your question. Some work has been done on flow of fluids through orifices of different shapes but those results hardly answer your requirements. However, we do cite it below for what it may be worth although you will note that these two authorities quoted do not agree upon one fundamental principle, the effect of viscosity on rate of flow.

The American Society of Mechanical Engineers, Research Publications, third edition, 1931, page 66, carries an article on "Fluid Meters, Their Theory and Application" and Dodge and Thompson, "Fluid Mechanics," page 297, make reference to velocity which may have some bearing upon the use of the general equation for flow expressed as follows:

$V = C\sqrt{2gH}$

V = velocity of discharge
C = orifice coefficient
g = acceleration of gravity
H = head in feet.

According to Dodge and Thompson, "the velocity is independent of viscosity and density." A.S.M.E. research report referred to above states, "there is a variation with viscosity and density." As both of these statements are based on dimensional analysis there is evidently some discrepancy.

"Millidarcy" and "Centipoises" Defined

As I understand it the millidarcy is the unit of permeability. What is the definition of this unit? Also definition of centipoises?—V. E. S.

A darcy has been defined by the Topical Committee on Development and Production Research as:

"The standard unit of permeability of porous media to fluids shall be the 'darcy' which is defined herein as 'the rate of flow in milliliters per second, of a fluid of 1 centipoise viscosity through a cross-section of 1 square centimeter of a porous medium, under a pressure gradient of 1 atmosphere (76.0 cm. Hg.) per centimeter and conditions of viscous flow.'

"Dimensionally the permeability constant may be expressed as:

$$(k) = (L^2)$$

"For convenience the sub-unit may be used:

$$\text{millidarcy} = 0.001 \text{ darcy.}"$$

Viscosity is that property of a liquid which causes it to offer resistance to the relative movement of two adjacent particles of liquid. Absolute viscosity is the force which will move a unit area of surface with unit speed relative to another parallel plane surface, the two surfaces being separated by a unit thickness of fluid. The absolute viscosity is usually measured in poises (one dyne-second per square centimeter). One centipoise is one one-hundredth of a poise.

Are Fish a Source of Petroleum?

Are fish fossils a favorable indication of crude oil? What causes them?—O. W. S.

The following quotation from Memoir No. 2 issued by the Montana Bureau of Mines and Geology and entitled "Natural Gas in Montana," by Eugene S. Perry may prove of interest and partially answer both of your questions.

"Petroleum and natural gas are generally considered to be derived from organic matter, essentially in the form of microscopic particles distributed through marine sedimentary rocks, mainly shales. Such sediments are known as 'source rocks.' This type of organic matter is called petroliferous, to distinguish it from coal-like organic matter which is carbonaceous. The origin of the petroliferous matter is difficult to ascertain because it is generally in extremely small microscopic grains without organic structure, and it is evenly disseminated through the source rock in small amounts. In some localities certain definite types of organic matter have been recognized in source rocks; for example, the Tejon and Monterey formations of California contain large quantities of diatom remains (microscopic one-celled plants), and certain Texas source rocks contain large quantities of foraminiferal remains (microscopic one-celled animals). It has been suggested that fish and other larger life forms have contributed to the petroliferous matter in rocks, but in many source rocks fossil remains of such large forms are not plentiful and if they did contribute, it is probable that they underwent thorough disintegration prior to burial. Source rocks of petroleum compounds in the commercial field invariably appear to be of marine origin."

Fossil fish are created much the same way as all other fossils and a fossil is described as any rock, mineral or other object dug out of the earth consisting of the remains, impression or trace of an animal or plant of past geological ages preserved in a stratified deposit or in a cave. This hardly describes how the fossil is formed but it is generally agreed that fossils represent the stone-like impression of objects which have formed molds imprisoned in other rocks. The original object has been generally replaced atom by atom by the deposition of rocks forming material until finally the petrified remains alone are left to mark the place where the object originally existed.

In 1923 Dr. John Muirhead MacFarlane, University of Pennsylvania, Philadelphia, Pa., published a book entitled "Fishes—the Source of Petroleum," in which he set forth the results of a rather exhaustive study of fishes in all geologic ages from Cambrian down to the present and advances the theory that the remains of those fish had been a source of petroleum. If you can find a copy of this book it should quite fully answer all of your questions about fish as a source of crude oil. The theory has been modified in recent years and organic matter is now credited as being a more abundant source material than fish remains.

Trenton Lime in Ohio and Indiana

I am interested in obtaining information with respect to the possibility of oil production below the Trenton lime in Central Ohio and around Lima, Ind. Where would I look for the most recent geological information on this area? Any information you can give me on this area will be appreciated.—C. S.

It is not within the province of this department to pass upon the oil possibilities of any formation or section but we are glad to refer you to literature concerning the area in which you are interested so that you may look it up and form your own opinion.

Papers and articles on the Trenton lime of Central Ohio and Lima, Indiana, as listed by the American Association of Petroleum Geologists are as follows:

Trenton Formation in Indiana; Geology of Natural Gas, p. 850. Vol. VI, A.A.P.G. Bulletin, p. 374.

Trenton Formation in Ohio; Geology of Natural Gas, pp. 845, 850, 909. A.A.P.G. Bulletin, Vol. V.

Trenton Gas Fields in Indiana; Geology of Natural Gas, p. 844.

Trenton Group; Geology of Natural Gas, p. 75.

Trenton Limestone; Problems of Petroleum Geology, pp. 18, 59, 103, 106, 494, 506, 519, 525; Geology of Natural Gas, pp. 71, 101 and 108.

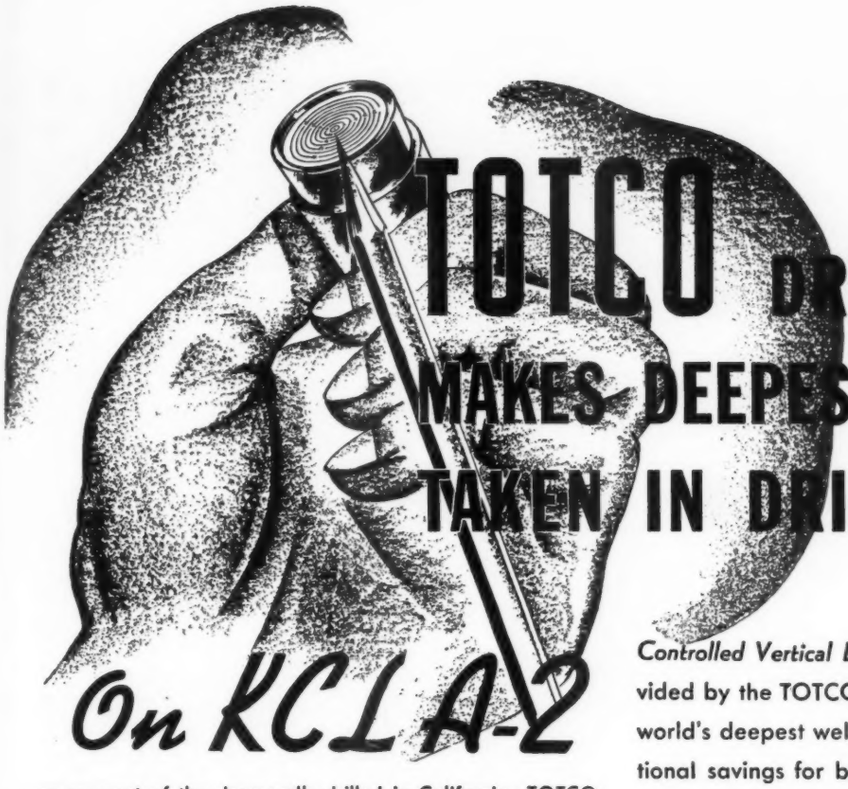
Structure of Top of Trenton Limestone in Lima-Indiana Field; Problems of Petroleum Geology, p. 522.

Trenton Oil Areas in Western Ohio, map. Structure of Typical American Oil Fields, Vol. 1, p. 126.

Trenton Reservoirs; Problems of Petroleum Geology, p. 373.

Trenton Sand in Ohio; A.A.P.G. Bulletin, Vol. XI, p. 946.

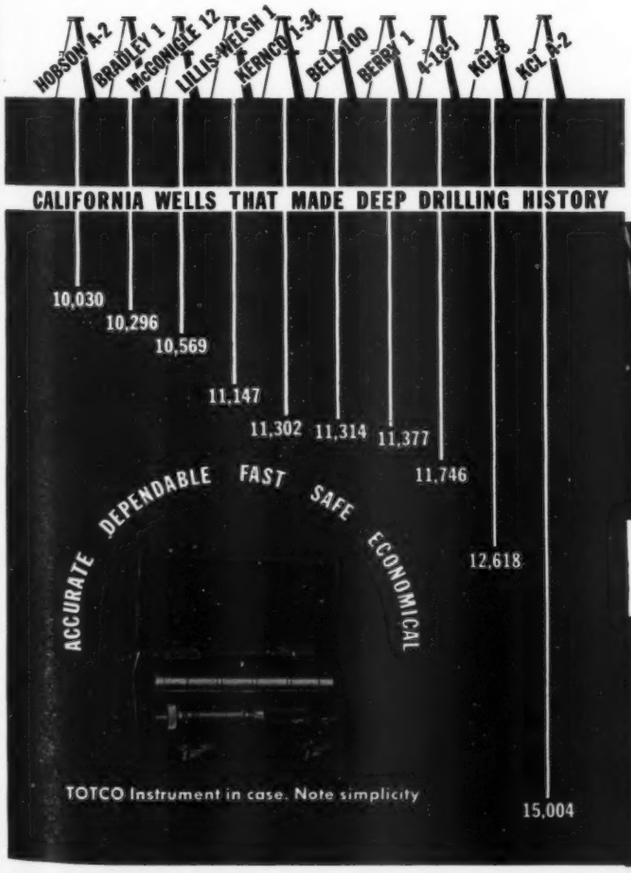
If you desire to secure copies of these books or bulletins you can write to the American Association of Petroleum Geologists, Wright Building, Tulsa, Okla.



TOTCO DRIFT RECORDER MAKES DEEPEST RECORD EVER TAKEN IN DRILLING HISTORY

On KCL A-2

—as on most of the deep wells drilled in California—TOTCO Readings provided the required information below 11,500 feet, to completion. TOTCO was the *only* means of obtaining records of the verticality, because of the intense heat and other adverse conditions. • TOTCO regular equipment was used, and the drilling personnel of Continental Oil Company deserves great credit for bottoming this well at 2° 20'. • TOTCO SCORES AGAIN on the deepest well in the world's drilling history!



Controlled Vertical Drilling methods used from the information provided by the TOTCO Drift Recorder are not sensational—even in the world's deepest well—but *Controlled Vertical Drilling* provides sensational savings for both drilling and producing departments in deep wells, shallow wells, wells that immediately go on the pump or flow by the head. *TOTCO is always dependable regardless of depth.* For this reason, more and more major oil companies and drilling contractors are turning to TOTCO—the *one* and *only* means, *under all conditions,* of determining verticality *accurately, dependably, quickly, safely, easily* and *economically!*

More than 200 Operators, in 12 states, have proved to themselves the value of TOTCO Records taken at frequent intervals while drilling. It will pay you to consult with a TOTCO representative, and discuss from an analytical standpoint what TOTCO can do for you.

TOTCO RENTALS* AND SERVICE

Carson Machine & Supply Co., 1603 S. E. 29th St., Oklahoma City and all Branches.

Houston Oil Field Material Co., Inc., 1524 Maury St., Houston, Texas and all Branches.

R. D. Wallace, Continental Bldg., Casper, Wyoming, Servicing Rocky Mountain Area.

TOTCO California Warehouse and Service, 6416 McKinley Ave., Los Angeles, California Telephone THornwall 9922.

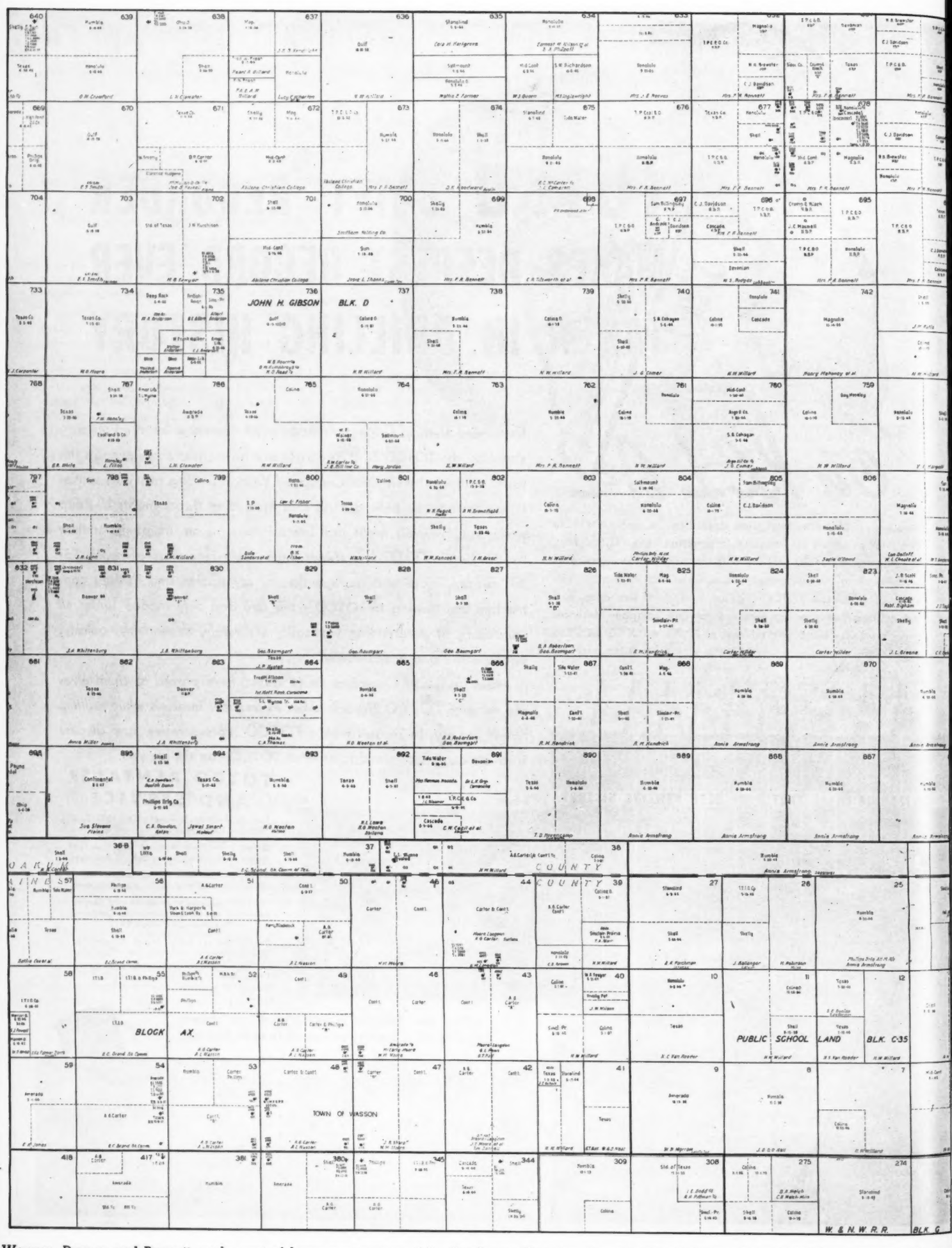
Export Sales: Lucey Export Corporation, 3505 Woolworth Building, New York City.

**TOTCO Drift Recorders are leased on a monthly rental basis in the U. S. A. In Foreign Fields, they are for sale only.*

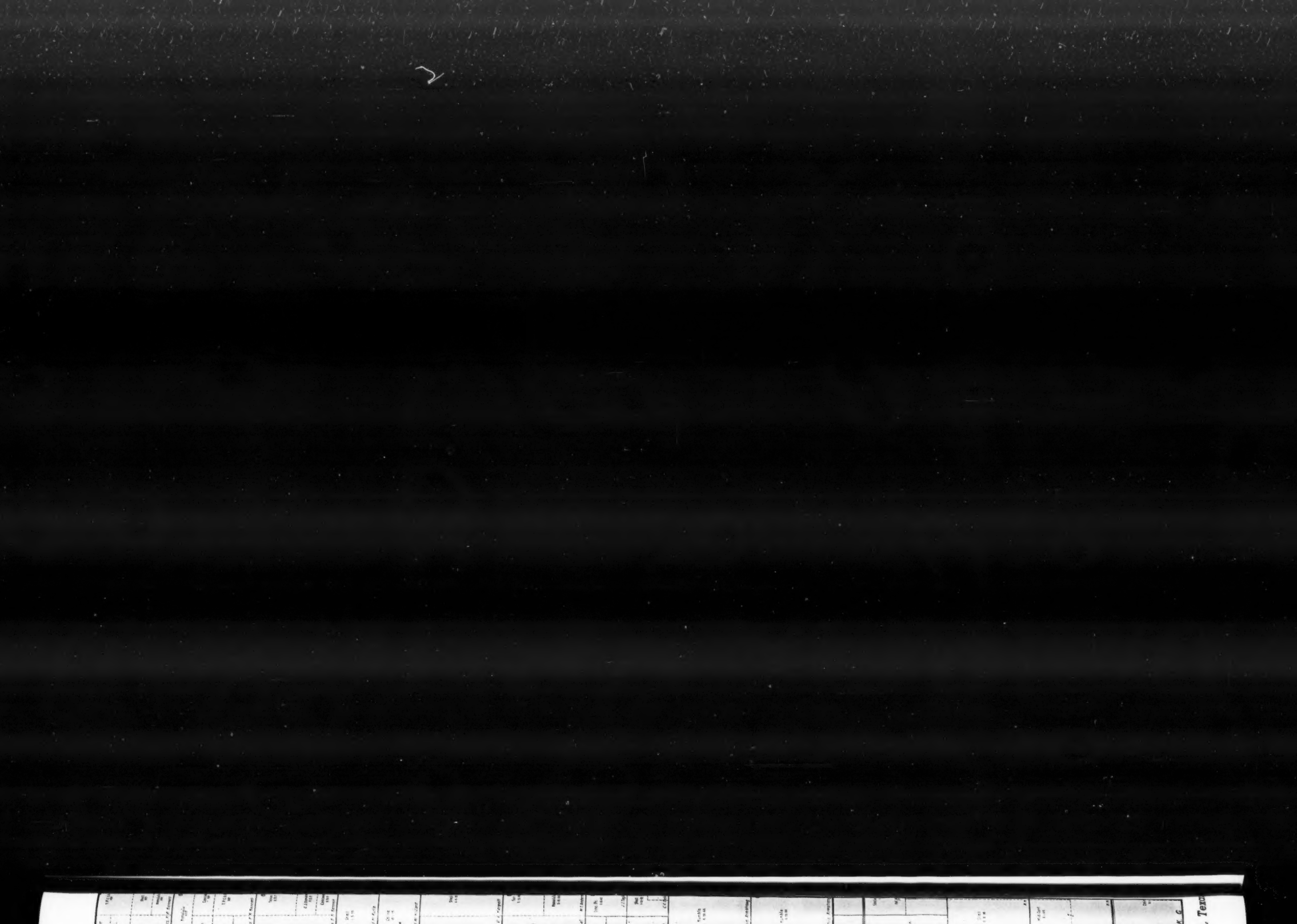
Driller and TOTCO representative are shown checking duplicate readings taken at 14,880 feet

INTERNATIONAL PETROLEUM EXPOSITION TULSA MAY 14-21

TECHNICAL OIL TOOL CORPORATION, LTD.
1315 NORTH HAVENHURST DRIVE, LOS ANGELES, CALIFORNIA



Wasson, Denver and Bennett pools, part of large map prepared by Southwest Mapping Co., Fort Worth National Bank Building, Fort Worth, Texa



SERVICE ON NEW FIELDS

WASSON, DENVER and BENNETT FIELDS, WEST TEXAS

Compiled by The Oil and Gas Journal, April 25, 1938

Approved names:

Originally the Wasson, Denver and Bennett fields were considered as separate reservoirs. Intermediate drilling has established the Wasson-Denver fields as one, and the entire producing area has come to be known as the Wasson field in proration records, and for all other practical purposes. The northwestern portion of the Wasson field is often referred to as the Denver area, however.

The Bennett field lies about 5 miles northeast of Wasson, and although it is not improbable that the Wasson-Bennett areas may be combined by later intermediate drilling, the Bennett field retains its identity for the time being. The territory has grown so large in areal extent that it is often referred to as the "Gaines-Yoakum County area."

Geographic location:

The Wasson field is situated northeast-southwestward across the Gaines-Yoakum County lines about midway east and west along the southern line of Yoakum County. The Bennett field lies 5½ miles east by north from present Wasson producing limits in southeastern Yoakum County.

Principal cities and towns near the field:

The Wasson townsite and other small centers have sprung up in each of the producing areas. Plains, Texas, county seat of Yoakum County, is 12 miles north of the field on unpaved roads. Seagraves, Texas, lies about 20 miles southeast of the fields on paved Highway No. 51, and is accessible from the fields on gravel highways. Lubbock lies about 60 miles northeast of the fields on paved highway from Seagraves. Seminole, Texas, county seat of Gaines County, is about 20 miles south of Seagraves on Highway No. 51, and about 40 miles from the field. Hobbs, New Mexico, is 31 miles west of Seminole. Odessa and Midland, Texas, are about 100 miles south of the field. Fort Worth is 368 miles from this area.

Location of supply houses:

Much of the supplies are received from such equipment centers as Hobbs, Odessa and Midland. There are a few branch stores in Seminole and Seagraves and in the field. Others are going in. Suitable sites are available on the highways and lease roads, but no railroads run into the fields proper.

Railroads serving the area:

The Santa Fe main line to Amarillo runs through Lubbock, with a branch south to Seagraves. The Texas-New Mexico Railroad connects with the Texas and Pacific at Monahans, Texas, and runs northward through Hobbs, New Mexico, and terminates at Lovington, New Mexico.

Trucking and hauling facilities:

Much of the field hauling is done by companies out of Hobbs, Odessa or Midland. There are a few branches of the larger transportation firms with headquarters in the field proper. Adequate facilities are available. Bad lease roads have hindered service under severe weather conditions in the past.

Hotel accommodations:

Limited hotel accommodations may be had at Seagraves or Seminole. Adequate facilities are obtainable in Lubbock, Hobbs, Odessa or Midland.

Schools and churches:

No schools or churches are situated in the fields. Seagraves is a small farming town, but now expanding to care for the oil activity nearby. Most of the oil field workers and families live in Seagraves, Seminole, or Hobbs.

Electric power and gas companies:

Electrical power lines from Seagraves have not yet been extended into the fields. No trunk gas lines serve the fields. Some of the larger operators are constructing gas systems of their own.

DEVELOPMENT

Early history:

The Bennett field was first discovered on April 15, 1936, following intensive seismic work and surface geology. Honolulu Oil Corp. and Cascade Petroleum Co. No. 1 L. P. Bennett gauged 234 barrels initially after being shot with 340 quarts in saturated Permian lime, 5,090-5,364 feet. Development here has continued slowly, and only 15 wells have been completed in a cluster covering about 800 acres. The highest initial production to date in this field was 2,156 barrels.

Following seismic surveys, Amon G. Carter and Continental Oil Co. jointly drilled No. 1 A. L. Wasson, SW SW NW of the P.S.L. Survey, section 48, Block A-X, which was completed in July, 1937, having an initial production of 332 barrels from saturated Permian, 4,880 to 4,959 feet.

The discovery well was completed soon thereafter in the Denver area about 6 miles to the northwest by Denver Oil and Refining Co. on the J. A. Whittenburg tract in the NW corner of section 831, John H. Gibson Survey, Yoakum County. Initial production was 892 barrels from saturated Permian 4,960 to 5,017 feet.

American Liberty Oil Co. (T. L. Wynee, Tr.) No. 1 Willard, P.S.L. Survey, only 400 feet north of the Gaines County line into Yoakum County, and about midway between the Wasson-Denver producing wells, was subsequently drilled to establish a definite connection between the two areas. Its initial production was 426 barrels.

Completions to date:

There is a total of 45 producers in the Wasson field, of which 29 are considered in the Denver area and 16 in the Wasson area. Eight dry holes have been drilled into the Permian lime at the south, southeast, and north of the field.

Fifteen producers have been completed at Bennett, and no dry holes.

Present drilling operations:

In the Wasson field 20 wells are now drilling or rigging up. There are 10 rigs or drilling wells at Bennett. At present there is no intermediate test drilling between the two areas which would serve to establish their interconnection.

Present daily average production:

The Wasson field 45 producers have an established potential of 29,060 barrels, and a daily allowable of 4,500 barrels.

The Bennett field 15 producers have an established potential of 11,832 barrels, and a daily allowable of 1,720 barrels.

Manner of production allocation:

Allocation in the Wasson- Denver area is on a per well basis at this time, permitting a daily production of 100 barrels per well per day.

In the Bennett area, a 50 per cent acreage and 50 per cent potential formula is employed, giving a per well average of 114 barrels during April. A grant of 3.6 barrels per acre, and .071218 barrels per barrel potential is stipulated in this field.

Accumulated production:

Wasson-Denver area, to April 15, 1938	280,000 bbls.
Bennett area, to April 15, 1938	144,500 bbls.

Present owners of producing leases:

Amerada Petroleum Corp., Amon G. Carter, Continental Oil Co.,

SERVICE ON NEW FIELDS

Denver Producing & Refining Co., Humble Oil & Refining Co., J. W. Murchison, Phillips Petroleum Co., Shell Petroleum Corp., Sun Oil Co., Texas Co., and American Liberty Oil Co. at Wasson.

Honolulu Oil Corp., Siosi Co., Shell Petroleum Corp., Cascade Petroleum Co., Texas Pacific Coal & Oil Co., Mid-Continent Petroleum Corp., Texas Co., and Magnolia Petroleum Co. at Bennett.

Present owners of undeveloped acreage:

Owners of undeveloped acreage within the fields, or in the intermediate area between the Wasson-Bennett areas, in addition to the companies listed above, are: Tide Water, Skelly, Coline Oil Co., H. H. Brewster, Crump & Black, Devonian, Stanolind, and others.

FUTURE DEVELOPMENT

Proven area:

By contouring the Wasson and Denver areas together, a total of from 45 to 50 sections of land appear to be within the productive limits. From meager control in certain portions of the field, possible barren spots or saddles are indicated. At the present time, from 25,000 to 30,000 acres are considered proven. The field's productive limits are not defined to the northwest, northeast or southeast. There are several dry holes from 3 to 5 miles to the north, which serve to limit development in that direction, but the intermediate acreage between production and these dry holes is not included in the estimated proven area.

Only inside development work has been done in the Bennett area, and there is very little control upon which to base an estimate of probable productive acreage. Oil saturation is penetrated in Bennett wells from about 5,090-5,270 feet, and is topped at about the sub-sea depth that it is bottomed at Wasson, 5 miles to the southwest. On this basis, the area can be contoured with the dip in the northeastward direction and from early control assume that it will all be productive. The intermediate area has been intensely mapped by geophysical instruments; some of the surveys are reported to have indicated a possible barren section between the two producing areas. Only the drill can tell, and at the present time no wells are drilling in the intermediate territory. Should the two areas later prove to be connected, it will be the largest producing field in the Permian Basin from the standpoint of areal extent.

Sub-surface data on wells in the territory are as follows:

	Wasson Discovery	Denver Discovery	Bennett Discovery
Elevation	.....	3,616	3,557
Top anhydrite	...	2,170	2,424
Top Yates	.....	2,960	3,220
Top lime		4,373	4,810
Top pay	4,900	4,960	5,096
Total depth	4,959	5,017	5,278

Well spacing:

Through cooperative agreements between operators, a 40-acre spacing pattern has been adopted in the Wasson-Denver areas. Offsetting agreements have located all but a few of the early wells 440 feet out of each corner of 160s, and it is thought this spacing program will continue.

At Bennett, with the exception of one 160-acre tract which now has 6 wells on it, all drilling has been done on a 40-acre pattern. With the injection of a 50 per cent acreage factor in the allowable formula for this field, wide spacing will no doubt continue.

Estimated rate of development during next 12 months:

Development work will be slow and methodical in both these areas. At present the fields are enjoying comparatively high allowables. There is no desire on the part of operators to "over drill", as from past experiences they know that as soon as new completions begin to come in too fast, allowables will be cut. From 40 to 50 wells will probably be completed in the Wasson field during the next 12 months. At Bennett, 20 to 30 completions are estimated over the next 12 months.

The high cost of drilling and completing wells in this 5,000-5,200-foot area, compared with other fields in the central and southern portions of the basin, also serves to discourage any rapid development campaign just at this time.

Reserves:

As is the case with most Permian lime fields, the available data do not readily lead to any accurate estimation of recoverable reserves. The perhaps overworked round figure of 10,000 barrels per acre for the better class of Permian Basin fields is not though improbable for the Gaines-Yoakum County areas. Comparatively small potentials in some of the early completions discounted the ultimate productivity of the area to some extent (largest wells gauging around 2,000 barrels initially).

Such a figure as 10,000 barrels per acre may be checked volumetrically. Assuming what appears to be conservative factors of 15 per cent average porosity, 60 per cent saturation, 40 feet net saturation thickness, and 30 per cent recovery, an indicated ultimate recovery of 10,200 barrels per acre is shown. Drilling time records suggest that the porosity and thickness factors are representative. One well in the Wasson area has taken 150 feet of penetration into the section, finding about one-third sufficiently porous and saturated to produce oil.

For comparative purposes, the new areas might be checked against the Church-Fields pool, which has already recovered over 8,000 barrels per acre; the Hobbs field which has averaged over 7,000 barrels per acre to date; or the Penwell field which has in certain portions of the field produced from 5,000 to 17,000 barrels per acre. All of the older fields mentioned are still large producers, and their remaining life extends far into the future. From early available data, however, the Gaines-Yoakum County fields are not entirely comparable, as they do not have as high initial pressures as the fields cited, they produce from greater depths, initial flowing potentials were not as large, and the type of reservoir control is not definitely established at this time.

Due to the lack of present knowledge as to reservoir characteristics, or the productive limits of either of these fields, it is difficult to suggest a possible recovery figure for the entire area at this time.

DRILLING

Drilling problems:

Drilling in the Gaines-Yoakum County district is considered about the most difficult in the Permian Basin, due to depth, high pressures, and hard digging. Otherwise, the drilling of these 5,000-5,250-foot wells is no more difficult than in many other comparable areas.

One of the most important problems facing operators is the necessity of keeping down drilling costs. By "cutting all the corners," using smallest casing program possible, and keeping contract price per foot near the margin, the wells still cost from $40,000 to $50,000 each to drill and complete.

Mud problems:

Greatest care is required in control of drilling mud through the high pressure air and gas levels, although difficulties of this nature have been experienced only in certain wells. Much of the experience gained in the prevention of blowouts in the Monument field of New Mexico has been applied in the new areas. In the salt zone, high pressure air has been encountered, and as this level is drilled with only surface pipe in the hole, it is extremely important that it be controlled to prevent a blowout on the surface. The gas found in the Yates sand in certain wells is also high pressure, but by setting the intermediate string of casing above this point, surface connections are well anchored. Both of these zones are of considerably higher pressure than the bottom hole pressure upon completion. Drilling fluids, heavily weighted with commercial muds, are necessary. In one certain well where these high pressure zones were troublesome, about $16,000 worth of mud was used in drilling the hole.

Types of equipment used:

Steam or diesel rigs are employed. The steam rig, using three 125-horsepower boilers, is most common. The conventional type drawworks and rig, considered as the heavy duty type in that territory, are used. The lighter rotaries used for 2,000-3,500-foot drilling in the lower part of the basin are considered inadequate for this deeper drilling. Rigs from Hobbs, Fuhrman, Seminole and other nearby fields have been moved in.

On the diesel rigs, both the V-belt drive and the portable type

FIELD OPERATIONS

Summarizing the Week's Developments

KANSAS—New producing areas were opened in section 12-11-18w, Ellis County; section 28-17-10w, Ellsworth County, and section 31-21-12w, Stafford County. A 4,111-bbl. Misener sand producer was completed in the Zenith pool, Stafford County, the biggest well yet drilled in that county. Work was started at a wildcat 10 miles northwest of Pratt City in Pratt County.

OKLAHOMA—Interest was revived in the North Lucien pool, Noble County, when a well at the south edge ran wild for 30 minutes following a shot and was estimated good for 1,500 to 2,000 bbls. of oil daily. A well in the Dolomite zone, Oklahoma City field, flowed at the rate of 250 bbls. of oil an hour after knocking out bridge. A wildcat in section 12-17-1e, Payne County, had a good showing of oil in Hunton lime but was drilling ahead to Wilcox sand. A new well in the Ramsey pool, Payne County, showed a 12,500-bbl. daily potential.

TEX-LA-ARK AREA—North Louisiana, Arkansas and East Texas border had little of interest to offer, but in Coastal Louisiana, in the Woodlawn gas field in Jefferson Davis Parish, a 586-bbl. oil well was completed, the first oil found in the field. The South Crowley Prospect in Acadia Parish is showing very encouraging signs of an oil pool in section 22-10s-1e, and a new pay was opened in the Valentine field in Lafourche Parish.

TEXAS—The Alice area in Jim Wells County is the most attractive part of the Southwest Texas district and will be the scene of an extensive drilling campaign within the next two weeks. Another distillate pool was opened in Hidalgo County 6 miles west of La Blanca field. In the Gulf Coast area the Sandy Point field in Brazoria County was extended 2,000 feet and two extensions were made in the Eureka field, Harris County. Oil showings in wildcats in Jones, Haskell and Stephens indicate probable new pools. The Slaughter pool in Hockley County was extended three-quarters of a mile by a 429-bbl. well. The fast growing K.M.A. field in Wichita and Archer counties was given an allowable of 16,223 bbls. per day in May.

NEW MEXICO—Activity increased in southeastern New Mexico, 23 tests having been started, including nine new locations in the Vacuum area, Lea County. Wildcats in sections 12-18-35 and 33-13-36, between the Vacuum and Monument fields, were dry and abandoned. Work was started at a wildcat in section 22-10-37, in northeastern Lea County, about 45 miles north of Hobbs.

KENTUCKY—The McClosky sand discovery well in Henderson County is flowing 40 bbls. per hour into barges and is being marketed with a Louisville refinery by way of the Green and Ohio rivers.

CALIFORNIA—After slighting the Los Angeles Basin several years wildcatters are going back into that area to seek new pools. Widespread seismograph work and leasing preceded the wildcat play. Deeper production was found in the Montebello field last week and a 570-bbl. well in the deep part of the Torrance field has again encouraged the deepening of old shallow wells.

Completions in All Fields

(Week Ending April 30, 1938)

	Oil	Gas	Dry	Total	1938 total comp. to date	1937 total comp. to date
N. Y., Pa. and W. Va.	46	8	6	60	1,479	1,278
Ohio	7	5	4	16	299	303
Indiana	0	0	1	1	26	40
Kentucky	8	2	1	11	238	42
Illinois	20	0	7	27	278	23
Michigan	15	0	3	18	251	271
Kansas	17	1	9	27	591	721
Oklahoma	24	1	10	35	567	912
Texas:						
North Central Texas	49	0	25	74	967	891
West Texas	53	0	6	59	769	816
Texas Panhandle	0	0	0	0	205	210
East Texas	34	0	1	35	796	691
East Central Texas	3	0	0	3	119	212
East Texas Border	4	0	0	4	55	143
Gulf Coast Texas	21	1	1	23	407	442
Southwest Texas	27	3	10	40	711	1,104
Total Texas	191	4	43	238	4,029	4,509
North Louisiana	7	1	2	10	191	201
Gulf Coast Louisiana	4	0	5	9	157	151
Total Louisiana	11	1	7	19	348	352
Arkansas	1	0	1	2	79	40
Montana	1	0	0	1	20	36
Wyoming	0	0	1	1	54	28
Colorado	1	0	0	1	3	6
New Mexico	9	0	2	11	197	245
Utah	0	0	0	0	0	0
California	20	0	3	23	447	467
Total United States	371	22	98	491	8,906	9,273
Total previous week	387	23	104	514		
Difference	16	1	6	23		

Outstanding Fields--Highlights

(Week Ending April 30, 1938)

FIELD—	Rigs up	Wells drlg.	Weekly oil completions	Initial prod.	Total No. oil wells	Daily av. prod.
TEXAS						
East Texas	34	113	46	2,362	25,028	433,198
Talco	4	3	1	137	628	27,000
K.M.A.	48	181	25	22,421	315	15,450
Ector County	17	104	20	23,864	997	33,100
Winkler County	6	15	8	5,504	1,624	37,300
McCampbell	0	3	0	0	116	5,367
Saxet	4	6	0	0	597	35,698
Benavides	3	9	2	205	181	10,039
Hastings	6	6	5	3,026	513	20,229
OKLAHOMA						
Dora	2	7	5	1,625	55	5,875
Oklahoma City	2	16	0	0	2,441	101,750
KANSAS						
Barton County	6	18	2	2,981	310	13,050
Ellis County	4	19	4	2,902	312	10,755
Rice County	4	18	2	3,690	1,144	34,470
Russell County	5	39	1	932	1,058	29,810
NEW MEXICO						
Lea County	14	96	7	1,888	1,709	98,260
LA-ARK-TEX						
Rodessa, Ark.	0	10	0	0	80	7,235
Rodessa, La.	1	2	1	315	455	41,675
Rodessa, Tex.	2	21	4	1,025	425	37,770
Lisbon, La.	1	15	1	1,410	201	7,550
Shuler, Ark.	2	19	1	840	44	21,260
MICHIGAN						
Buckeye	3	16	5	1,100	397	25,371
ILLINOIS						
Central Illinois	33	128	20	5,153	440	31,742
CALIFORNIA						
Wilmington	6	31	6	12,719	448	99,250

Eastern Field Report

By STAFF CORRESPONDENT

Add 30 Million Feet of Gas to Oriskany Sand Potential

PITTSBURGH, Pa., May 2.—Completions in the lower eastern fields continued routine and consisted of six dry holes, seven gas wells, and five producers with an initial daily production of 34 bbls. Among the gas wells, there were two in the Oriskany field in West Virginia which added over 30,000,000 feet to the potential of that field, and a very fair gas well in Wetzel County. Southeast Ohio furnished most of the new oil production.

SOUTHEAST OHIO

The best producer for the week was Allen Willey and others No. 3 Caldwell and Currie, in section 2, Bowling Green Township, Licking County, which was completed at a total depth of 3,005 feet and swabbed 25 bbls. the first day after shot. It will make about a 5-bbl. pumper.

In Athens County, the Kachelmacher Estate drilled No. 5 on the O. H. Franks farm in the southeast quarter of section 10, York Township, through the Berea sand at 965 feet. It was a dry hole.

In Perry County, H. L. Altier & Sons completed No. 10 Monahan, section 33, Pleasant Township, in Berea sand at 1,087 feet. It produced 1 bbl. the first day after shot.

Two deep tests are drilling in southeast Ohio which are of importance. In Coshocton County, Wittmer Oil & Gas Properties are drilling on the S. P. Balder farm in Crawford Township and should reach the Clinton sand at about 4,100 feet.

In Trumbull County, Norwood P. Johnston and others are drilling on the G. M. Porter farm in Mecca Township and have reached 2,750 feet. The test is just west of the crossroads at Mecca. It found some water in the Oriskany horizon which will be carried to the Newberg and then cased off.

SOUTHWEST PENNSYLVANIA

The progress of the rotary tests holds the interest of southwest Pennsylvania. In Westmoreland County, the Peoples Natural Gas Co. have reached 4,250 feet on the John S. Marshall farm on the Grapeville Anticline in Penn Township. Progress has been delayed by fishing and waiting for new drill pipe.

In Allegheny County, South Penn Oil Co. and others are drilling at 2,250 feet on the Fred Backhaus farm on the Kellersburg Anticline in West Deer Township. Having passed through all but thin sections of sand, progress is now speeding up.

The test of Wasson and Co. on the J. H. Sorg farm on Chestnut Ridge in North Union Township, Fayette County, continues to present more complications on that structure in the shallower formations. With water intruding from either the Bailtown, Tiona or related sand, the hole was reamed and casing set to 1,932 feet. The hole then was dry with a showing of gas at 1,990 feet. At 2,280-85 feet salt water again was struck and at 2,387 feet that water is still being carried in the hole. Calf wheels will be set and the casing carried and, after underreaming, it will be lowered. The gas is still evident when the bailer comes out of the hole. In Wharton Township, on the same structure, the Greensboro Gas Co. was delayed by the line cutting a hole in the casing which was renewed to 1,260 feet using new 10-inch. This test on the J. R. Thompson farm is now drilling at 4,692 feet and the cement spray bailer is being run to keep the caving down to a minimum.

South of these tests, north of Wymps Gap in Springhill Township, Fayette County, the L. J. Houze Convex Glass Co. set 1,330 feet of 8¾-inch casing in the test on the Paul Dunham farm and are now putting on a new line to resume drilling.

In Washington County, Carnegie Natural Gas Co. deepened the test on the Fannie M. Closser farm in Amwell Township, from 1,946 feet to 2,562 feet. Fifty-foot sand was topped at 2,534 feet. The final gauge is 33,600 feet and will be produced.

In Fayette County, American Natural Gas Co.'s test on the Harriet Bute farm in Franklin Township to 3,510 feet was plugged as a dry hole. The Big Injun sand was at 1,270-1,470 feet and there was a sand, possibly Speechley, but lacking the color, at 3,280 feet.

In North Union Township, Fayette County, the Pitroil Fuel Co. and H. G. Whitfield are drilling on the Charles Vance farm at Vances Mills below 810 feet. The hole was drilled 250 feet with 13-inch and cased with 10-inch. It is expected to set about 900 feet of 8-inch and 1,250 feet of 6-inch.

In Washington County, F. K. Fawcett and others are rigging up a second test on the Jason Buchanan farm in South Franklin Township. In Amwell Township, the Union Gasoline & Oil Corp. is building rig for No. 814 on the Leroy Vankirk farm. In Morris Township, this company is drilling at 180 feet in No. 4 W. E. Craft.

In North Strabane Township, Washington County, Beedle and Debone are down 445 feet in the test on the John Arblaster farm. The Keystone Drilling Co. is testing at 1,215 feet in No. 2 J. C. Beabout. In Peters Township, R. M. Duden and others are drilling at 2,550 feet, deepening the P. L. Parks test and have the rig standing on the Antonius Provenzano farm in Buffalo Township.

In Donegal Township, Washington County, Joseph Heidlemeir was drilling at 682 feet on the J. M. McMurray farm with the Pittsburgh Coal placed at 428 feet.

Greene County

In Center Township, Greene County, Carnegie Natural Gas Co. are continuing to drill No. 3 J. H. Orndoff with the Nineveh Thirty-foot sand at 3,064-88 feet and only a small showing of oil. The present depth is 3,120 feet and it will be drilled through the Fifth sand. J. B. Orndoff is shut down at 1,535 feet in No. 2 G. M. Scott.

In Washington Township, Peoples Natural Gas Co. is drilling at 2,320 feet, deepening the Eva M. Simmons test. In Monongahela Township, Fred Garrison is drilling at 2,185 feet on the Stoneking farm.

WEST VIRGINIA

Three small producers were completed in West Virginia during the week. In Ritchie County, J. W. Rowland completed a 2-bbl. well on the M. D. Barnett Heirs farm in Grant district in Injun sand at 1,725 feet. In Murphy district, P. J. McDonough deepened No. 4 E. R. Nicholson, a former gas well, to 1,960 feet and it is producing 4 bbls. a day along with 200,000 feet of gas.

In Wirt County, Septer W. Douglas completed the second test on the Al Blankenship farm in Spring Creek district in the Cow Run sand at 887 feet, good for 22 bbls. a day.

Gas Wells

The best gas well for many weeks outside of the Oriskany field was completed by the Manufacturers Light & Heat Co. on the Elizabeth Blatt farm in Proctor district, Wetzel County. The total depth was 3,016 feet with the top of the Gordon sand at 3,006 feet and over 7,000,000 feet of gas at 3,006-08 feet. In this district, the test of George Eagan on the W. D. Denham farm was drilled through the Gordon and was dry.

In Cabell County, the Lower Toms Creek Gas Co. test on the Hash farm in McComas district was completed as a gas well at 2,304 feet. Berea sand lay at 2,236-52 feet with a gauge of 116,000 feet a day.

In Gilmer County, Pittsburgh & West Virginia Gas Co. completed No. 7649 H. L. Simmons, in Glenville district with the Big Injun sand at 2,0602,134 feet and about 50,000 feet of gas at 2,110-29 feet.

In Pleasants County, L. C. White completed No. 8 R. H. Browse, in Union district in Injun sand at 1,425 feet. It is a gas well, gauging 50,000 feet a day.

In Roane County, R. W. Heasley, on the Marion Hays farm in Harper district, drilled through the Injun sand to 2,242 feet and has a dry hole.

In Doddridge County, Robert Broadwater and others drilled a second test on the Ranza B. Ash farm in Grant district through the Big Injun sand to 2,040 feet and it was dry.

Oriskany Gas Field

Two wells were completed in the Oriskany gas pool in Kanawha County. In Poca district, the United Fuel Gas Co. completed No. 4771 on the B. A. Sisson farm at 4,893 feet and it gauged 17,000,000 feet a day from the Oriskany sand.

In the same district, the United Carbon Co. completed the test on the William R. Young farm at 5,139 feet with Oriskany topped at 5,121 feet. The well gauged 14,122,000 feet a day.

Three new locations were made, all in Poca district. Poca Fork Oil & Gas Co. on the Comb's farm, surface elevation of 801.5 feet; Phillip K. Harness on the Lena Snodgrass farm, surface elevation 614 feet, and Spartan Gas Co. on the R. B. and Fred Baldwin farm, elevation of 833.9 feet.

The United Carbon Co. topped Corniferous lime at 4,685 feet on the James S. Fisher farm in Poca district, and has not recovered the tools lost at 477 feet in the test on the Louisa E. Long farm. The United Fuel Gas Co. was drilling at 4,894 feet in No. 4784 Oscar L. Gibson; at 163 feet in No. 4787 W. J. Glass and others; at 2,648 feet in No. 4790 W. H. Sisson; and is building rig for No. 4793 W. A. Fisher and others, with material on the ground for No. 4794 B. B. Milam and No. 4795 Nancy Carney and others.

Guy B. Ray is down 1,140 feet in the Emmett Thaxton test; the Mullins Gas Co. is drilling at 1,350 feet in the Esta Fisher Bonham test; Joe Rubin at 2,100 feet in the Carney heirs test; Liosag Fuel Co. at 2,100 feet on the H. C. Matthews farm; D. H. Stephenson & Co. at 2,122 feet on the Rozella Shamblin farm, and the Columbian Carbon Co. at 1,100 feet in the Boyd Castro test. In Union district, Columbian Carbon Co. is drilling at 3,350 feet in the Nelson H. Cavender test, and the West Virginia Gas Co. is down 1,827 feet with collapsed casing on the J. E. Layne and others land. In Elk district, Columbian Carbon Co. has reached 1,548 feet on the B. F. Jones land and 4,284 feet in the Margaret Rayhill test. The Cameron Oil & Gas Co. was drilling at 3,700 feet in the Henry Hansel test. In Poca district, South Penn Oil is drilling at 4,640 feet in No. 3 S. S. Beane; at 1,440 feet in No. 5 T. H. Newhouse, and at 310 feet in Beane-Newhouse line well.

Deep Tests

In Jackson County, Potter Development Co. was drilling at 2,700 feet on the William T. Chancey farm in Ripley district, with Berea sand at 2,298-2,310 feet, and a showing of 60,000 feet of gas.

In Wood County, the Potter Development Co. had reached 2,100 feet on the W. H. Orem farm in Harris district. In Steel district, the Belmont Quadrangle Co. was drilling at 2,380 feet on the C. D. White land.

New Work and Other Operations

In Boone County, the Cameron Oil & Gas Co. has a location for No. 4-A on the George P. Alderson farm in Scott district. The Hope Natural Gas Co. has abandoned the Co. 19 Federal Coal No. in Sherman district.

In Gilmer County, E. L. Bush made a location on the Jennie Hays Powell farm in Glenville district, and is drilling at 1,849 feet in No. 2 Guy B. Young and

(Continued on Page 87)

Southwest Texas District

By
F. L. SINGLETON

Jim Wells Promised Active Summer Drilling Campaign

CORPUS CHRISTI, Tex., May 2.—The most active leasing and royalty campaign in Southwest Texas in years is underway in the Alice area, Jim Wells County, which promises to be the scene of an extensive drilling campaign within the next two weeks. Leasing has extended along a 6-mile trend in a northeast and southwest direction from H. H. Howell and others No. 1 Lindsey and Reed, the discovery well which was reported in last week's review.

Production from the Frio formation was extended 1½ miles west with the completion of Tom Graham No. 1 Martens, which is producing an unestimated amount of oil while cleaning out after having been completed from a screen setting at 3,521-34 feet, the total depth. The showing of oil was unexpected, as this section produced only gas in the two wells that had been completed. Five tests are getting ready to start drilling and locations have been made for several more. Southern Minerals Oil Corp. is moving in material for No. 1 Trussell, north of the Martens well. W. J. Goldston is rigging up for No. 1 Lindsey and Reed an east offset to Howell No. 1 Lindsey and Reed. Herman Heep is moving in about 4,000 feet northwest of the discovery well, while Cox & Hamon have made location for an outpost about 3 miles north of the discovery well on the W. R. Perkins 835-acre tract.

Practically all buying has been done by independent operators, although during the past few days, several major companies are reported to have entered the play. One-half mile east of the discovery well, Tom Graham is reported to have purchased an 80-acre lease for $20,000 cash and $40,000 out of the oil produced. Two miles north of the well, Mills Bennett Production Co. is reported to have paid $20,000 in cash and a like amount in oil produced for 200 acres out of the W. R. Perkins tract.

There is some question as to whether Howell No. 1 Lindsey and Reed is producing from the basal Frio or the Vicksburg formation, either of the two horizons offers a high per-acre recovery. With three wells producing gas from the upper Frio approximately 6,000 acres have been proven for this type of production and the extent of the deeper sand should be known within the next two weeks.

The significant feature of this new strike is that it opens an entirely new play for the Jackson Trend, in an area which heretofore has not been looked upon as favorable. This area is located between the Miocene and Oligocene production of Refugio County on the south and the shallow Laredo-Pettus trend on the west. Favorable light was thrown upon this area in the past year with the discovery of the Benavides field in Duval County, and more recently with the opening of the East Premont field in Jim Wells County, which gave the territory its first Frio production.

Distillate Field in Hidalgo

Another distillate field was opened in Hidalgo County by Gulf State Oil Co. No. 1 Josefa Cardenas, which is flowing 159 bbls. of 56-gravity distillate, and 144 bbls. of connate water daily through a three-eighths inch choke with tubing pressure 2,675 pounds and casing pressure 3,150 pounds. The hole is bottomed in the Frio formation at 7,963 feet and production was obtained by perforating the casing at 7,930-45 feet. The field has been named San Salvador and is located 6 miles west of the La Blanca field in Share 156. This is the third distillate field in the county.

A new sand in the Saxet field, Nueces County, was believed to have been opened with the completion of Western Gulf Petroleum Corp. No. 4 Isensee. On a 24-hour potential test it flowed 145 bbls. through a one-eighth inch choke, with casing pressure 1,300 pounds and tubing pressure 1,000 pounds. Production is through perforated casing at 6,464-67 feet. No other well is producing from that section, although it may correspond to some other sand due to a faulted condition.

West Saxet Cut Off on North

The West Saxet field, Nueces County, was defined on the north by the showing of salt water in Heep Oil Corp. No. 2 McKenzie. On a 10-minute drill stem test at 5,781-5,805 feet, it tested 120 feet of salt water and mud with a slight oil showing, and no pressure. It is coring ahead in search of a deeper sand. The well is 1,100 feet north of No. 1 in B.S.&F. Survey No. 419. This field was believed to have been one of the district's most important discoveries, but within recent weeks, the limits have been fairly well defined and the showing of salt water in several wells located within the proven area has been discouraging.

In the Luby field, Stanolind Oil & Gas Co. No. 6 McCann, flowed 135.45 bbls. daily through a one-eighth inch choke, from sand at 5,040-62 feet, the total depth. Same company's No. 2 Spessard is being completed after perforating the casing at 5,050-54 feet. Seaboard Oil Corp. No. 19 Luby is drilling plug, preparatory to perforating casing, at a total depth of 5,070 feet.

New Sand in Benavides

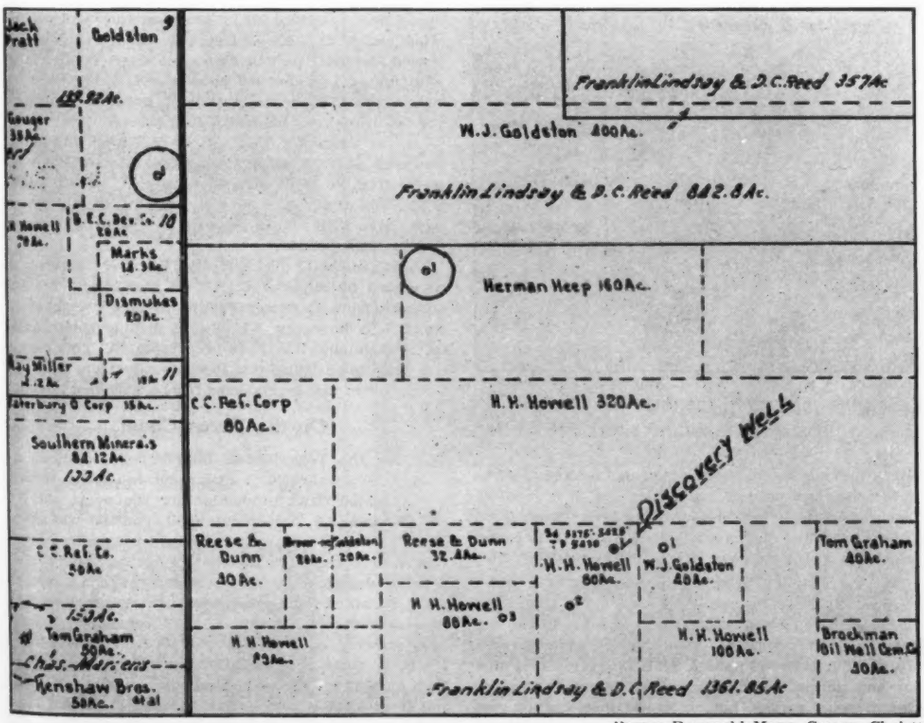
Another sand in the Benavides field, Duval County, was indicated by the showing of Hiawatha Oil & Gas Co. No. 7 Southland Life Insurance Co. Sand was cored at 3,933-47 feet, and on a 20-minute drill stem test at 3,915-52 feet, it tested 500 feet of oil and 55 pounds of pressure. It is being drilled to the lower horizon. The well is on the extreme southwest side of the field in section 10, Ball Ranch Subdivision in the Santos Flores Grant. Five miles west of San Diego, Corpus Christi Refining Co. No. 1 Parr has been abandoned at 6,020 feet. The Cockfield was topped at 5,377 feet.

Two new wildcats were schedued to get underway in Refugio and Calhoun counties. In the Woodsboro area, Refugio County, I. J. Allen has let contract for a 7,000-foot wildcat to be drilled on the Mrs. Birdie Driscoll Rooke lease, section 3, Bonnie View Subdivision, Jose Miquel and Jose Miria Aldrete Grant. Southwest of Port Lavaca, Calhoun County, Benedum-Trees, Inc., is planning to drill a deep wildcat on the Roemer Estate in the Osgberry Survey. The proposed location is about a half mile southeast of No. 1 Roemer, a dry hole which is credited with having logged several showings below 8,200 feet.

The East White Point field, San Patricio County, was being extended about 1,300 feet to the west as Plymouth Oil Co. prepared to make a production test in No. 1 T. B. Owens. Sand showing oil was logged at 5,667-78 feet. Three miles northeast of the field, on a farm-out lease from Pan American Production Co., Atlantic Refining Co. has made location for No. 1 D. F. Jones in section 72, George Pauls Subdivision of the Coleman-Fulton Pasture Co. lands.

Balcones Fault Area

The most important development in the Balcones Fault Line district was the opening of production from the Glenrose lime in the Chittima gas area, Maverick County. The new strike was made by the Wellington Oil Co. with the completion of No. 1 Chittim which flowed 5 bbls. of 38-gravity oil, and approximately 9 bbls. of salt water in two hours through a three-eighths inch choke.



Porter Regenold Maps, Corpus Christi

All indications point to an active drilling campaign in the Alice area, Jim Wells County. Plat shows first oil well, and gas wells which are producing from a shallower sand

COMPLETED WELLS

Completed wells in proven Southwest Texas fields

(Continued on Page 78)

Texas and Louisiana Gulf

By
NEIL WILLIAMS

Two New Fields in Coastal Louisiana; Texas Prospects

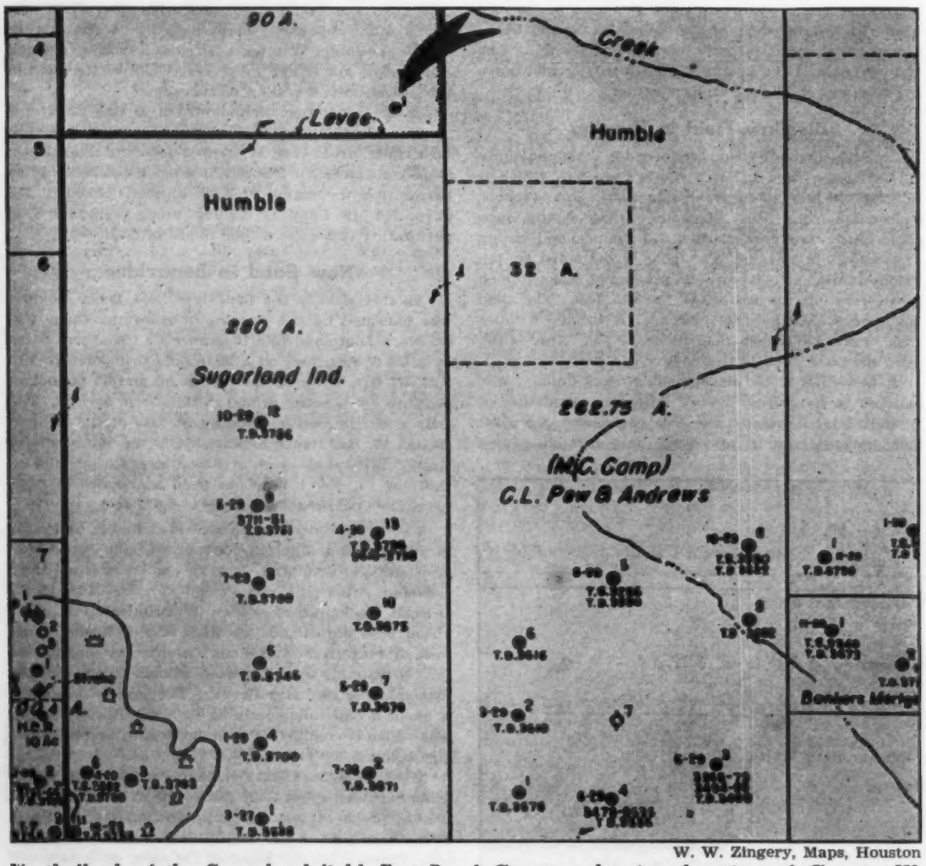
HOUSTON, Tex., May 2.—The opening of the first crude production in the Woodlawn field, Jefferson Davis Parish, and the possibility of a new oil field being developed in the South Crowley Prospect, Acadia Parish, kept the Louisiana sector of the Gulf Coast district in the limelight the past week.

Union Sulphur Co. converted the Woodlawn gas field into a prolific oil field with the completion of No. 2 Calcasieu National Bank, which flowed 586 bbls. of 36.7-gravity oil per day through a quarter-inch choke with working pressure on the tubing 1,200 pounds. At the end of the first 24 hours, the choke was changed to a three-sixteenths, and it is flowing 350 bbls. daily. The hole was plugged back from a total depth of 9,056 feet and the casing perforated from 8,894-93 feet.

No. 2 Calcasieu National Bank is located in section 12, north of No. 1 Calcasieu National Bank, the discovery well, completed in February of this year at 8,286-88 feet. The well is a joint operation with Magnolia Petroleum Co., and is the fourth well drilled on the prospect. The first development was done by George W. Strake, who drilled two deep holes to the south. Two additional locations were made by Union Sulphur Co. following the completion, and equipment is being moved in. No. 3 Calcasieu National Bank is located 660 feet north and 330 feet west of the southeast corner of section 12-9s-6w, while No. 1 Miller is a northeast offset in section 6.

The South Crowley Prospect, Acadia Parish, was practically assured of being placed on the producing list, with the showing of Humble Oil & Refining Co. No. 1 Boyd Finch, section 22-10s-1e. The hole was plugged back from a total depth of 10,222 feet to 7,318 feet, and on a 19-minute drill stem test through perforated casing at 7,308-15 feet, 660 feet of fluid was recovered of which 85 per cent was 35-gravity oil and 15 per cent was drilling mud. It showed 700 pounds of working pressure. Screen and liner is being set for a production test.

In southwestern Beauregard Parish, on the Bancroft Prospect, Republic Production Co. is reported to be making a Schlumberger survey in No. 1 Lutcher Moore Lumber Co. preparatory to running casing. While information on the well has been vague, it is reported that considerable gas pressure has been encountered around 9,000 feet, the approximate total depth. Location is southwest of the town of Bancroft in section 10-6s-13w.



W. W. Zingery, Maps, Houston

North flank of the Sugarland field, Fort Bend County, showing location of George W. Strake No. 1 Sugarland Industries, which has shown promise of opening flank production

In Terrebonne Parish, section 77-19s-17e, 3 miles southeast of Lake Ducade, Fohs Oil Co. No. 1 Buckley-Bourg is nearing the 12,000-foot horizon with no additional showing reported. Sand showing gas was cored last week at 11,630-48 feet. A Schlumberger survey was run and showed no showings of oil or gas on the regular or usual survey, but on lateral investigation, the survey showed 6 ohms resistivity. A core at 11,648-66 feet showed 7½ feet of gas sand, and the next 1½ feet was sand showing oil with a good cut and odor. From 11,653-55 feet was shale and from 11,655-57 feet some sand with a slight showing was recovered. This is the first showing logged and preparations were being made to abandon when the section was cored. It is planned to core ahead and if no other showings are logged soon, 5-inch casing will be run for a production test. This is thought to be the Lirette sand, which for a short time produced pipe line oil in Humble Oil & Refining Co.'s deep test in the Lirette field located to the east.

Additional development for the Chalkley Prospect, Cameron Parish, was assured with the announcement of a new location by Humble Oil & Refining Co. for No. 1 Katherine Bel Hanzen, in section 9-12s-6w. The location is about a half mile southeast of the company's No. 1 Hanzen, a deep test abandoned last year

Location was made by Amerada Petroleum Corp. in the Villa Platte field, Evangeline Parish, for No. 1 Alexander Fournier in section 44-3s-2e. All drilling in this field has been done by Continental Oil Co. which has four rigs operating. Of particular interest is the company's No. 1 Vidrine, an outpost in section 47, which is drilling below 9,408 feet. This is several hundred feet below the expected producing horizon. No. 1 Opelousas, section 44, topped the Sparta formation at 8,640 feet and is coring in the discovery sand at 8,943 feet.

In the South Roanoke field, Jefferson Davis Parish, Continental Oil Co. has a rig up for No. 1 Joe Sturdevant in section 36-10s-4w. The well is located on farmed-out acreage from the Shell Petroleum Corp. The two wells completed on this structure produced distillate.

New Sand in Valentine

A new sand in the Valentine field, Lafourche Parish, was opened by Pan American Production Co. with the completion of No. 1 Ducas Albriabat, section 10-17s-20e. The hole was drilled to a total depth of 7,882 feet and production was obtained by plugging back and perforating casing at 3,833-53 feet. On an initial gauge it flowed 10 bbls. per hour through a quarter-inch choke with tubing pressure 400 pounds and casing pressure 440 pounds. This is the shallowest production horizon yet discovered on this salt dome.

In the Charenton field, St. Mary Parish, the above company added another horizon to this structure by completing No. 5 Veeder at 1,125 feet for an initial production of 68 bbls. per day through a three-eighths inch choke with tubing pressure 50 pounds and casing pressure 225 pounds.

North of the Creole field discovery well, which was completed by Superior Oil Co. in the Gulf of Mexico offshore from Cameron Parish, the same company's No. 1 Sells in section 5-15s-8w, is drilling below 6,200 feet and no showings have been reported. This test is scheduled to be drilled to a 10,000-foot horizon, although the discovery well is producing from a 5,100-foot horizon.

On the Texas Coast

Along the Texas Coast, interest was centered on George W. Strake No. 1 Sugarland Industries, which has indicated flank production for the north side of this old dome. A three-minute drill stem test was made at 5,152-57 feet, the total depth, which found no pressure and recovered five thribbles of oil and drilling mud. A Schlumberger survey was made and 7-inch casing is being cemented for a production test. A core record of the section shows that from 5,120-30 feet, 1 foot of shaly sand showing oil was recovered. From 5,130-35 feet, 1 foot of shale and sand showing oil was recovered; from 5,137-47 feet, 8 feet of hard shaly sand showing oil, and from 5,147-57 feet, 1 foot of sand, shale and lime with a good showing of oil was recovered. Discorbis was topped at 4,140 feet, Heterostegina at 4,489 feet,

(Continued on Page 72)

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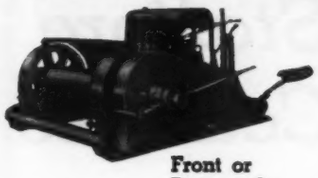

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Among Gulf Coast Drilling Contractors

Allen & Morris of San Antonio received contract for a 7,000-foot wildcat to be drilled for I. J. Allen in the Woodsboro area, Refugio County. The well is about 5 miles south of Woodsboro on the Birdie Driscoll Rooke lease, midway between the Refugio and Plymouth fields.

Contractors who have been operating in the West Saxet field, Nueces County, will no doubt move their idle rigs to the Alice area, Jim Wells County, which is experiencing a most active leasing campaign expected to result in extensive drilling during the next few weeks. In the past week five operations were under way and it has been estimated that from 10 to 15 wells will be drilling in that area within two weeks. The boom resulted from the completion of H. H. Howell and others No. 1 Lindsey and Reed, about 5 miles south of Alice, which produced high-gravity oil from a relatively new horizon. The discovery well was located on a small block and the surrounding acreage is held by various independent operators. While a temporary spacing order issued by the railroad commission last week, placing the field on a 20-acre spacing basis, will curtail drilling to some extent, there is enough individual leases to keep the field in the limelight for several months.

Al Buchanan Drilling Co. is preparing to complete a third producer in the Laguna Madre Bay offsetting the Flour Bluff field in Nueces County. The well is being drilled for Humble Oil & Refining Co. Sand showing oil was logged at 6,651-55 feet, the total depth, and casing is being cemented for a production test. Two wells are being completed in the Luby field for Stanolind Oil & Gas Co. and contracts were received for two additional wells. Two rigs are operating in East White Point and two in the Sinton field for Plymouth Oil Co.

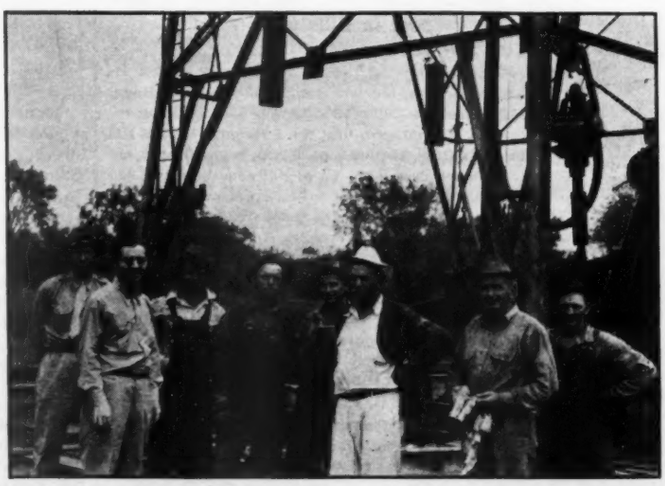
Harry L. Edwards extended the Sandy Point field about 2,000 feet west with the completion of J. A. Fite No. 1 fee. On a 24-hour gauge through a ¼-inch choke, it flowed 150 bbls. from perforations at 6,491-92½ feet. Another rotary is operating in the Dickinson field for the Kenben Oil Co.

Rowan Drilling Co. is completing two wells in the Fairbanks field for the Amerada Petroleum Corp. and Stanolind Oil & Gas Co. and contracts were received for two additional tests. Two rotaries are operating for Tide Water Associated Oil Co. in the Venice field, Plaquemines Parish.

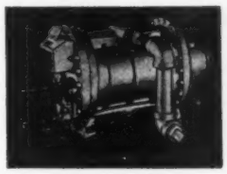
Housch, Schofield & Thompson are completing Mortex Oil & Gas Co. No. 1 Homer and Wendel Ley, located in the Fairbanks field. The hole is bottomed at 6,839 feet and 7-inch casing was cemented on bottom. In the same field and being drilled for Carroll Oil Co., No. 1 Ralph Johnston lease is drilling below 5,000 feet.

Jack Frazier extended the Eureka field, Harris County, about 750 feet south with the completion of his No. 1 Varner Realty Co., which flowed 277 bbls. in 12 hours through a ¼-inch choke. The rig is being moved over for No. 2 Vollmer-Neiman. In the Aldine area, his No. 1 Gillespie is drilling below 6,540 feet and should reach the expected pay horizon by the end of the week.

Trinity Drillers of San Antonio are making fast time on Coastline Oil Co. No. 1 State, located in Redfish Bay in the Lower Gulf Coast region. The well was spudded last week and is drilling below 5,400 feet.



Taken on location in the Ezzell field, McMullen County. On the extreme left, John Duffield, field superintendent for Edwin M. Jones; Sharp Ezzell of Ezzell Interests; F. L. Meeks, drilling superintendent; John Rush, driller, and members of the drilling crew



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Kansas Developments

By
DAL DALRYMPLE

Open New Pools in Stafford, Ellis and Ellsworth Counties

New producing areas were uncovered in Ellis, Ellsworth and Stafford counties, featuring field activity in Kansas the past week. Several interesting wildcats were started, and extensions were registered in some pools to add further interest to operations. Potential production of all Kansas wells was announced as 3,246,852 bbls. daily by the conservation division of the corporation commission, basing the total on reports for 18,274 wells as of April 20. The previous high potential was 3,086,640 bbls., established last January 20.

Colonial Oil Co., Duwe & Farris No. 1 Hadley, SE NE SE section 12-11-18w, wildcat 17 miles north of Hays in Ellis County, gave assurance of opening a new pool as oil rose 2,800 feet in the hole in one hour after drilling plug in casing set at 3,321 feet, on top of Arbuckle lime. Location is 1¾ miles southeast of the Burnett pool.

Ralph J. Wixson No. 1 Peterman, SW cor. section 28-17-10w, pool opener in Ellsworth County, had initial potential of 785 bbls. of oil from Arbuckle lime at 3,298 feet, total depth. It is about 1 mile north of the Stumps pool, and may be classed as an extensioner of that area.

Saco Oil Co. and Cardinal Oil Co. No. 1 Fischer, SW NW SW section 31-21-12w, has opened a producing area in Stafford County, between the Sittner and Gates pools. It found Arbuckle lime at 3,641 feet, total depth 3,648 feet, oil rose in the hole and potential test was scheduled.

The largest producer yet to be drilled in the Zenith pool, Stafford County, was recorded at Pure Oil Co. No. 1 Krey, SE section 14-24-11w, which flowed at the rate of 4,111 bbls. of oil daily from Misener sand. It is the company's first completion in the field, and is an east offset to a 2,622-bbl. well completed by Stanolind Oil & Gas Co.

Extension of the Burnett pool of northern Ellis County into southern Rooks County was indicated at Republic Natural Gas Co. No. 1 Reidler, SW SW SE section 31-10-17w. Oil rose 2,100 feet in the hole after drilling plug at 3,596 feet in Arbuckle lime. It is a north offset to the discovery well in Ellis County, which was completed for 1,890 bbls. of oil daily last fall.

Atlantic Refining Co. and associates announced location for No. 1 Berg, NE NW NW section 22-26-14w, Pratt County wildcat. It is 10 miles northwest of Pratt City and 4½ miles south of the Kipp pool in Stafford County.

Rice County

Continental Oil Co. and others No. 2 Jones, NW NW NE section 36-18s-8w, in the Geneseo pool, Rice County, made a potential production of 2,620 bbls. per day after a 2,000-gallon acid treatment in Siliceous lime at 3,135-38 feet.

Sunflower Oil Co. No. 4 Strange, NW SE NW section 16-21-7w, Hauschild pool, Rice County, had pay at 3,391-92 feet and made a potential of 1,070 bbls. without acid.

Texas Co. No. 3 Kleile, 364 feet from north and 330 feet from west lines of SW quarter section 34-19-10w, Silica pool, an old well deepened from 3,331 feet to granite wash at 3,904 feet, was completed as a water disposal well.

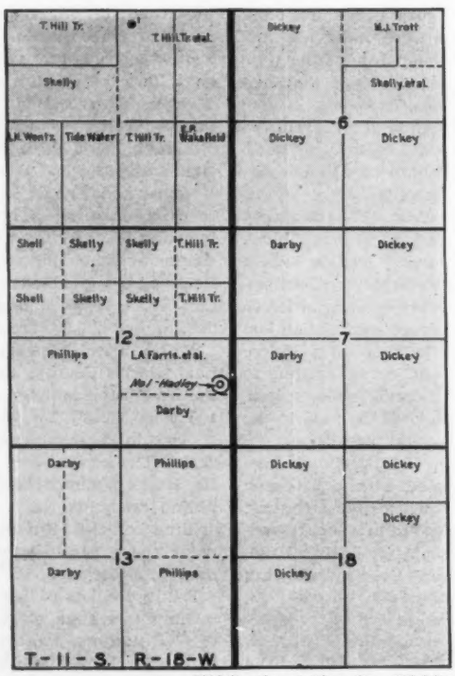
Skelly Oil Co. was rigging up rotary for No. 2 Volkland B, NE SW NW section 5-18-10w, Stumps pool. Continental Oil Co. and others were building rotary rig for No. 1 J. A. Lewis, NE NE NE section 14-18-8w, Geneseo pool, and Cities Service Oil Co. had rig up for No. 1 Purcell, SW SE NE section 28-19-9w, Campbell pool.

Russell County

Continental Oil Co. No. 2 Rein, SE SE NW section 27-14-13w, Hall pool, Russell County, was acidized with 7,000 gallons in Kansas City lime at 2,875-2,905 feet, total depth, and was given a potential of 932 bbls. per day.

Lauck & Moncrief No. 1 Miller, NE NW NW section 29-13-14w, originally drilled to 3,328 feet, had no showing in Siliceous lime and was plugged back to 3,090 feet and tested, and abandoned after acid treatments failed to develop paying production.

Stewart No. 1 Bronson, NW NE SE section 20-11-15w, North Fairport, moving in material; Continental Oil Co. No. 2 Henry Rein A, NE NE SW section 27-14-13w, Letsch pool, drilling at 1,280 feet; Cities Service Oil Co. No. 1 Becker, a wildcat, 1,297 feet from north



Mid-Continent Map Co., Wichita

Colonial Oil Co., Duwe & Farris No. 1 Hadley, section 12-11-18w, has opened a new pool in Ellis County

and 480 feet from west lines of SW quarter section 21-14-14w, cellar dug; Sinclair Prairie Oil Co. No. 2 Rogg, SE NE SE section 29-14s-13w, Letsch pool, building rotary rig; W. I. Southern, Inc., No. 1 Meharg, NE NE NE section 18-15-13w, Coralena pool, deepening from 2,990 feet, set 5-inch casing on top of Siliceous lime at 3,225 feet and waiting for cement to set; Coralena Oil Co. No. 2 Sellens estate, NW SW SE section 29-15-13w, Trapp pool, moving in machine, and No. 3 Sellens estate, SW NW SE section 29, moving in machine; W. I. Southern, Inc., No. 12 Sellens heirs, NE SE SW section 29-15-13w, location, and No. 13 Sellens heirs, SE NE SW section 29, location; J. J. Hall No. 1 Landon, a wildcat, SW SW SE section 11-15-14w, location.

Ellis County

Republic Natural Gas Co. No. 2 Bemis, NE SW SW section 21-11s-17w, Bemis pool, Ellis County, found Siliceous lime at 3,458-60 feet, total depth. It flowed 100 bbls. the first hour, and was given a potential of 2,434 bbls. per day.

Champlin Refining Co. of No. 2 Glatheart, SW NW SE section 29-11-17w, was acidized with 1,500 gallons and then with 2,500 gallons in Siliceous lime at 3,568-95 feet, and produced a potential of 1,115 bbls. per day.

Saco Oil Co. and others No. 1 Dickinson, SE SE SE section 15-12-16w, is a 70-bbl. well from Siliceous lime at 3,399 feet, total depth 3,413 feet. It had been acidized.

Atlantic Oil Investment Co. No. 1 Jenson, SW SW SW section 12-12-18w, Shutts pool, found Siliceous lime at 3,620-27 feet, total depth. It pumped 690 bbls. in four hours and was given a potential of 2,028 bbls.

Carter Oil Co. No. 1 Foster, 330 feet north and 440 north of C section 1-15-16w, a wildcat, was abandoned at 3,455 feet. Siliceous lime was topped at 3,440 feet. It was acidized several times without commercial results.

J. J. Hall No. 1 Smith, SE SE NW section 14-12-16w, Ellis County, which had been drilled to 3,409 feet and plugged back was tested in Kansas City lime at 3,215-3,323 feet made a 30-bbl. well after two big acid treatments.

Champlin Refining Co. was building rotary rig for No. 3 Hadley B, SE NE SW section 29-11-17w, Bemis pool.

Barton County

The Texas Co. No. 3 Disque, SE NE SW section 3-17-11w, Davidson pool, Barton County, had Siliceous lime at 3,352-61 feet, total depth. It was given a 1,000-gallon acid treatment and proved good for 1,528 bbls. per day.

Raymond Gear and Atlantic Refining Co. No. 1 Sullivan, NE SE SW section 29-17-13w, a wildcat west of the Ainsworth pool, was a hole full of water at 3,396-98½ feet, total depth, and was abandoned.

Stanolind Oil & Gas Co. No. 2 Rose, NE NE NE section 3-20-11w, Silica pool, Barton County, had Siliceous lime at 3,284-90 feet, total depth 3,294 feet. It was acidized with 2,000 gallons and produced a potential of 1,453 bbls. per day.

Colonial Oil Co. was moving in material for No. 1 Lust, a wildcat, NW NW NE section 19-19-13w. Champlin Refining Co. had rotary rig up for No. 1 Reeves, a wildcat, SW SW SW section 29-20-14w.

Rooks County

Carter Oil Co. No. 1 Leist, SW SW SW section 10-8s-17w, Rooks County, was dry and abandoned at 3,508 feet. Siliceous lime was topped at 3,489 feet.

Carter Oil Co. had cellar dug for No. 1 J. F. Whitford, a wildcat 455 feet from north and 440 feet from east lines of SE quarter section 12-7s-17w, north of the Stockton pool, and Duee & Farris were building rotary rig for No. 1 Suter, a wildcat, SW SW NE section 28-9s-19w, west of the town of Zurich.

Stafford County

Stanolind Oil & Gas Co. No. 1 Hullman, SE SE SW section 11-22-13w, Drach pool, Stafford County, found Siliceous lime at 3,749-55 feet. It was acidized with 2,000 gallons and produced 855 bbls. per day.

Pure Oil Co. No. 1 John Krey, SW NW SE section 14-24-11w, Zenith pool, Stafford County, made a potential of 4,111 bbls. per day. It flowed 759 bbls. the first four hours and 683 bbls. the second four hours from Misener sand topped at 3,791 feet, total depth 3,832 feet. The well flowed naturally. Previous to its completion test, and at a total depth of 3,817 feet the well had flowed 90 bbls. in 10 minutes and 180 bbls. in the next 45 minutes. Drilled 7 feet deeper, it flowed 304 bbls. in one hour. Deepened to 3,832 feet, it was given its potential test.

Stanolind Oil & Gas Co. No. 1 Ray McComb, NE NE NE section 27-24-11w, was dry and abandoned at 4,060 feet. It had Misener sand at 3,837 feet, Viola at 3,856 feet, Siliceous lime at 4,044 feet and all the formations were barren. This test is about 7 miles south and west of the Pure Oil Co. No. 1 Krey above noted.

Western Kansas Oil & Refining Co. made a location for No. 1 Scheufler, a wildcat, NW NW SE section 5-21-11w. In the Zenith pool, Stanolind Oil & Gas Co. made a

location for No. 1 B. A. Sims, SW SW NE section 11-24-11w, and had rotary rig up for No. 3 Mamie Volker A, SE SE NE section 23-24-11w. In the Drach pool, Stanolind Oil & Gas Co. was rigging up rotary for No. 1 Emil Fischer, NW NW NE section 14-22-13w.

Butler County

H. H. Patton No. 5 Shriver, SE SE SW section 33-27-6, Butler County, was abandoned at 2,180 feet. It produced all water.

Adair & Morton No. 4 Brandt, SW SE NE section 15-28-7, started at 65 bbls. per day after an acid treatment in pay at 2,705-15 feet.

Republic Natural Gas Co. was drilling at 300 feet in No. 1 Cannon, 800 feet south and 330 feet west of C section 15-28-7, Brandt pool.

In Stevens County, Kuhn Brothers No. 1 Burrows, C NW section 22-34-38w, was dry and abandoned at 1,320 feet. Kuhn Brothers made a location for No. 1 Burrows, C NW section 22-34-39w, and Republic Natural Gas Co. made a location for No. 1 Hamilton, C N half section 15-35-38w.

In Pratt County, Atlantic Refining Co., Skelly Oil Co. and Sinclair Prairie Oil Co. have rotary rig up for a test, No. 1 Berg, NE NW NW section 22-26-14w.

In Barber County, Pryor & Lockhart and others were drilling at 628 feet in No. 1 Gant C, 440 feet west and south of NE cor. section 18-31-13w, Lake City pool.

Estimated Daily Production

Estimated daily production for Kansas for the week ending April 30 and for the preceding week was as follows:

	Barrels	
	April 30	April 23
Oxford City	1,325	2,200
Burrton	11,725	11,650
Ritz-Canton	5,025	5,825
Graber	2,675	3,225
Hollow-Nikkel	3,150	3,250
Lerado	1,500	1,225
Voshell	2,525	2,725
Wellington	2,675	2,725
Ellsworth County:		
Lorraine	2,325	2,950
Other pools	1,205	1,490
Rice-Barton counties:		
Bloomer	3,050	3,425
Chase	5,550	6,125
Geneseo	2,825	3,300
Raymond	950	1,100
Silica	14,450	16,325
Silica—South	3,275	2,450
Keesling	1,025	1,125
Wherry	5,025	4,200
Miscellaneous Rice	4,645	3,990
Miscellaneous Barton	6,725	6,950
Russell County:		
Fairport	2,125	2,050
Gorham	1,465	1,640
Russell	1,125	1,450
Sullivan	6,430	7,085
Trapp	10,269	9,335
Miscellaneous Russell	8,395	8,655
Sedgwick County:		
Valley Center	1,005	1,005
Miscellaneous	2,785	2,785
Ellis County:		
Bemis	7,100	6,750
Miscellaneous	3,655	4,790
Kingman County	565	565
Stafford County	2,820	3,090
Greenwood County	9,500	9,050
Butler County	15,250	15,600
Other fields	23,611	21,795
Total Kansas	177,750	181,900

Ness County

Continental Oil Co. No. 2 Aldrich, 440 feet south and west of C section 8-18-25w, Aldrich pool, Ness County, topped Mississippi lime at 4,347 feet, had first oil at 4,553 feet, and was drilled to 4,368 feet. It was given a 2,000-gallon acid treatment and flowed 395 bbls. in eight hours and won a potential of 1,170 bbls. a day The oil is 36.7 degrees in gravity.

Continental Oil Co. had cellar dug for No. 1 J. E. Elmore, 440 feet north and east of center section 8-18-25w.

In Scott County, Atlantic Refining Co. is deepening No. 3 Dague, C NE NW section 14-20-33w, Shallow Water pool, from 4,642 feet and was drilling at 4,731 feet.

In McPherson County, M. & M. Drilling Co. No. 5 Sellers, CNL SW NE section 31-19-1w, Ritz Canton pool, was good for 599 bbls. a day, 8 per cent water, after a 1,000-gallon acid treatment in Kansas City lime pay at 2,967-78 feet, total depth.

In Kearney County, Tri County Gas Co. No. 2 Campbell, NW NW NW section 7-25-35w, was completed as a gas well at 2,685 feet, total depth, plugged back from 2,730 feet. It produced 9,000,000 feet per day.

In Harvey County, Wilhel & Bennett No. 2 Guldner, 660 feet east and 600 feet south of C section 19-23-3w, east edge of the Burrton pool, made a potential of 892 bbls. a day after a 2,000-gallon acid treatment in Chat at 3,359-69 feet. E. J. Shaffer had cellar dug for No. 1 Dole, C SW SW section 20-23-7w, Burrton pool.

In the Hilger pool, Reno County, Magnolia Petroleum Co. is deepening No. 1 Anna Wiesse, SE SE NE section 8-26-4w, and had run 5-inch liner to 4,168 feet. Siliceous lime was topped at 4,157 feet; old total depth, 4,109 feet.

In Ellsworth County, Edwards pool, Continental Oil Co. made a location for No. 2 Steinberg, 1,320 feet from west and 440 feet from south lines of SW quarter section 27-17-8w.

Greenwood and Woodson Counties

Aikman & Braden No. 1 Haas, SW SW NW section 25-23-14, Woodson County, was dry and abandoned at 1,700 feet. Mississippi lime was topped at 1,609 feet.

Ward McGinnis No. 7 Weide, 450 feet south and 330 feet east of C section 31-23-15, Weide pool, is an 18-bbl. pumper from pay at 1,555-88 feet, acidized with 3,000 gallons.

Oko Oil Co. completed a 1,000,000-foot gas well at 275-91 feet in the Winterscheid pool, NW cor. section 33-23-14.

Hennessy and others had machine rigged up for No. 1 Jackson, SE SW NE section 23-26-9, Greenwood County.

C. L. Sheedy and others had machine rigged up for No. 15 Klick, CWL SE NE SW section 20-23-14, Quincy pool, and Cleveland and others were drilling at 500 feet in No. 1 Fidelity Insurance Co., a wildcat, SE SE NE section 34-25-15, both in Woodson County.

In Cowley County, Bess & Gralapp and others No. 1 Hunt, CNL NE NW section 18-34-5, a wildcat, was abandoned as dry at 3,280 feet. Chat was topped at 3,263 feet.

In Sedgwick County, Prunty Production Co. No. 1 Rausch, NW SW SE section 16-25-1e, Goodrich pool, was acidized in dolomite at 3,344½-45 feet and made a potential production of 669 bbls. per day.

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8308

Gulf Coast Fields

(Continued from Page 68)

Marginulina at 4,643 feet and the Frio formation, according to a Schlumberger survey, was topped at 4,740 feet.

Extension to Sandy Point

A 2,000-foot west extension was marked up for the Sandy Point field, Brazoria County, with the completion of J. A. Fite No. 1-B fee. The hole was bottomed in salt water sand at 6,560 feet and was plugged back to 6,496 feet and the casing perforated at 6,490-94 feet. Oon a 24-hour gauge through a quarter-inch choke it flowed 150 bbls. The production is somewhat of a surprise, since the section cored did not look very promising.

Two extensions were made in the recently opened Eureka field, Harris County. Jack Frazier No. 1 Varner Realty Co. flowed 277.75 bbls. on a 12-hour test through a quarter-inch choke, showing a tubing pressure of 975 pounds and casing pressure 1,425 pounds. Production is through perforated casing at 7,714-32 feet. Approximately 1,000 feet north of the first oil well, Alamo Drilling Co. and others No. 2 Laura Lackner perforated casing at 7,689-97 feet, and the well is flowing an estimated 6 bbls. of oil per hour through a quarter-inch choke with tubing and casing pressure equalized at 2,500 pounds. Sand in this test was logged at 7,663-94 feet, several feet higher than in the discovery well. Location has been made by the same company for No. 3 Lackner, 1,500 feet east of the present well and the rig from the Frazier well is being moved in for No. 2 Vollmer-Neiman, 933 feet east of No. 1 Vollmer-Neiman.

In the Fairbanks Field

In the Fairbanks field, Harris County, one completion was reported and four other tests were in the process of completion. In the George Ayers Survey, Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 L. M. Day perforated casing at 6,838-50½ feet and flowed 673 bbls. daily through a quarter-inch choke. Wells being completed include Amerada Petroleum Corp. and Stanolind Oil & Gas Co. No. 1 Foley, J. Clarkson Survey. Sand was topped at 6,832-38 feet, and casing is being cemented. The Cockfield was topped at 6,540 feet, Discorbis Yeguaensis at 6,700 feet and Eponides Yeguaensis at 6,760 feet. No. 1 Silsberg topped sand at 6,829 feet and cored the section to 6,857 feet. Casing was cemented on bottom and the well is being completed through perforated casing at 6,836-54 feet. H. E. Williams No. 1 Vega, the most southerly well in the field, topped the Cockfield at 6,565 feet, Discorbis Yeguaensis at 6,730 feet and the Eponides Yeguaensis at 6,790 feet. The hole is bottomed at 6,853 feet and the well is cleaning into the pits from a total depth of 6,853 feet. H. C. Adams No. 2 J. P. Dawson, W. K. Hamblin Survey, is bottomed in sand at 6,850 feet with 7-inch casing cemented at 6,831 feet. The Cockfield was topped at 6,570 feet, Discorbis Yeguaensis at 6,750 feet and the Eponides Yeguaensis at 6,782 feet.

To the northeast at the Bammel area, Jack Frazier No. 1 Gillespie is drilling in shale and lime at 6,400 feet. The Marginulina Cocoaensis was topped at 6,508 feet, Massilina Pratti at 5,700 feet and the Textularia Hockleyensis at 5,791 feet.

Sun Oil Co. No. 1 Cade, located on the Bolivar Prospect, near Galveston Bay, Galveston County, has attracted attention due to a showing of oil and gas that was cored from 5,796-5,800 feet. No drill stem test was attempted and the hole is coring ahead below 5,810 feet.

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COMPLETIONS ON TEXAS COAST

Brazoria County

Danbury field: R. W. Fair No. 1 Bassett Blakely, 2,050 feet, abandoned. Hastings field: Navarro Oil Co.-Humble Oil & Refining Co. No. 3-E W. F. Beers, 6,060 feet, 585 bbls., quarter-inch choke. Jay Simmons No. 5 C. H. Alexander, 6,084 feet, perforated casing 6,050-80 feet, 655 bbls., quarter-inch choke. Stanolind Oil & Gas Co. No. 23 Fannie Drake, 5,610 feet, perforated casing 5,515-68 feet, 689 bbls., quarter-inch choke; No. 7 S. A. Pennock, 5,660 feet, perforated casing 5,631-05 feet, 399 bbls., quarter-inch choke; No. 17 Steve Paul, 5,340 feet, perforated casing 5,277-5,336 feet, 703 bbls., quarter-inch choke. Sandy Point field: J. A. Fite No. 1 fee, 6,560 feet, perforated casing 6,490-94 feet, 150 bbls., quarter-inch choke. West Columbia field: Merrick Oil Co. (Wallace Oil Co.) No. 1 Hargrove, 5,485 feet, 560 bbls., quarter-inch choke.

Chambers County

Anahuac field: Humble Oil & Refining Co. No. 33 A. D. Middleton, sand 7,057-85 feet, 683 bbls., quarter-inch choke. Cedar Point field: Humble Oil & Refining Co. No. 1 State, sand 5,939-6,008 feet, 135 bbls. in six hours, quarter-inch choke. Cotton Lake field: Humble Oil & Refining Co. No. 3 Howard, sand 6,286-93 feet, 108 bbls. fluid, 11 per cent salt water, quarter-inch choke.

Fort Bend County

Thompson field: Humble Oil & Refining Co.-Gulf Oil Corp. No. 32-X Lockwood-Sharp, 4,000 feet, perforated casing 2,960-59 feet, 1,680,000 feet of gas. Gulf Oil Corp. No. 12 Hammerstram, 5,402 feet, 199 bbls., quarter-inch choke.

Hardin County

Batson field: John Deering No. 6 Hooks, 5,625 feet, perforated casing 5,565-95 feet, 266 bbls., quarter-inch choke.

Harris County

Fairbanks field: H. C. Adams No. 1 J. P. Dawson, 6,832 feet, 327 bbls., quarter-inch choke. Amerada Petroleum Corp.-Stanolind Oil & Gas Co. No. 1 L. M. Day, 6,853 feet, perforated casing 6,838½-50½ feet, 673 bbls., quarter-inch choke. Friendswood field: Humble Oil & Refining Co. No. 3 E. A. Grey, sand 5,872-6,038 feet, 649 bbls., quarter-inch choke; No. 4 J. J. Settegast, sand 5,819-6,041 feet, 629 bbls., quarter-inch choke. Tomball field: Humble Oil & Refining Co. No. 1 J. W. Strickler, 5,577 feet, perforated casing 5,555-58 feet, 13 bbls. per hour, quarter-inch choke; No. 2 Petrich, 5,622 feet, perforated casing 5,617-21 feet, 240 bbls., quarter-inch choke.

Liberty County

Hankamer field: R. Olsen No. 2-B Ezzell, sand 2,961-69 feet, 230 bbls., 20 per cent salt water. Hardin field: Tide Water Oil Co. No. 1 A. Cessena, 7,630 feet, perforated casing 7,587-99 feet, 619 bbls., quarter-inch choke.

Withers field: Texas Co. No. 1-B Thompson, 5,550 feet, 109 bbls., eighth-inch choke.

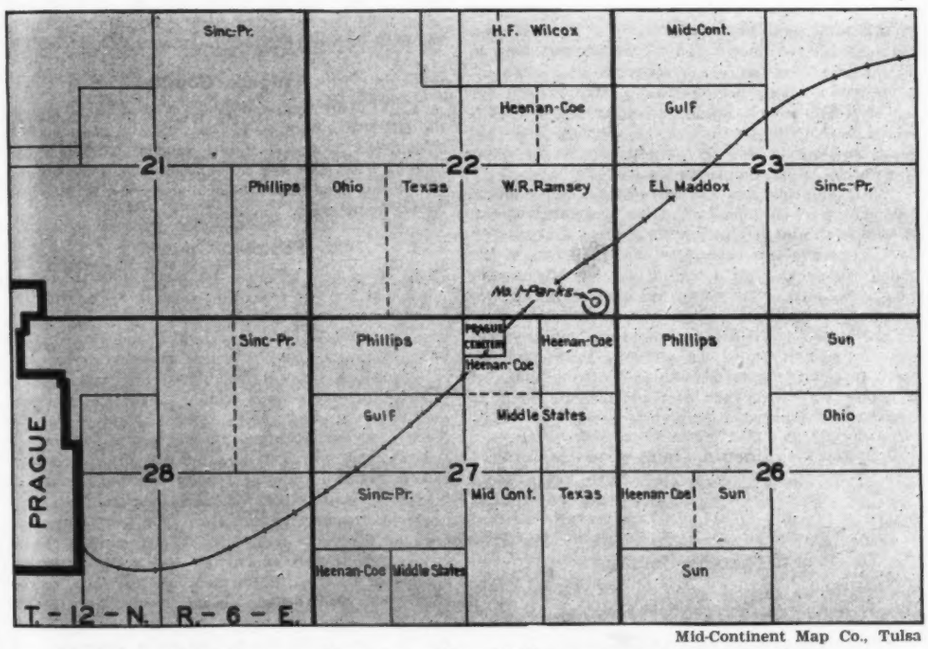
Oklahoma Operations

By
DAL DALRYMPLE

Good North Lucien Producer Drilling 7 Fox-Milroy Tests

The North Lucien pool of Noble County claimed attention of Oklahoma oil men the past week, when Otis A. Roberts No. 1 Bentley, NE NE NW section 6-20-2w, south side of the pool, blew tools out of the hole and ran wild for 30 minutes when cleaning out following a shot. Potential production was estimated at 1,500 bbls. to 2,000 bbls. of oil, with a big volume of gas. Before shooting at 5,385-5,400 feet, production was estimated at 500 to 800 bbls. of oil daily. Top of Wilcox sand was 5,385 feet, best pay 5,409 feet, total depth 5,441 feet. It is on the southeast trend from the discovery well in the pool.

Texas Co. No. 1 Longan, C W half NW NW section 12-17-1e, wildcat 5 miles south of the Ramsey pool in Payne County, was nearing a decision at the week-end as it was being drilled below 4,775 feet in Viola lime, after topping that formation at 4,766 feet. It was running higher structurally than two dry holes in the vicinity, but was about 200 feet lower than the Ramsey discovery well. It had good showings of oil in Hunton lime at 4,622-82 feet.



Mid-Continent Map Co., Tulsa

Work has started at a wildcat in section 22-12-6, east of Prague, Lincoln County

Seven wells are being drilled to deep pay horizons in the Fox and Milroy areas of Carter and Stephens counties. Gulf Oil Corp. No. 1 Franklin, C NW SE section 27-2s-3w, was started last week and was drilling below 530 feet. It is on a farm-out deal from Wirt Franklin Petroleum Corp. Same operator's No. 1-A Johnson, C SE NW section 27-2s-3w, was drilling shale below 4,785 feet; the company's No. 2 McClure, C SE NE section 28-2s-3w, was below 5,030 feet, in Woodford shale; and the company's No. 8 Garrett, C NW SW section 27-2s-3w, was drilling shale below 4,576 feet. Gulf Oil Corp. and Carter Oil Co. No. 1-7 Lester, C NW NW section 35-2s-3w, was making hole in Hunton lime below 5,205 feet. Carter Oil Co. No. 1 Carter-Harley, C NW NW section 19-2s-3w, had drill pipe stuck in the hole and was jarring on pipe. About 2 miles southeast of the Fox pool, Carter Oil Co. No. 1 Feagin, C NW SW section 36-2s-3w, was drilling below 5,585 feet.

In the northeast part of the Oklahoma City field, Clark & Co. No. 1 State, near Northeast Forty-second Street and Santa Fe Avenue, flowed at the rate of 250 bbls. of oil an hour after knocking out a bridge, and later was pinched in to 40 to 65 bbls. an hour through chokes. It was bottomed at 6,549 feet. Three men were injured at this test last week when well-head connections were blasted off. One block southeast of No. 1 State, Olson Oil Co. No. 2 Slaughter flowed 62 bbls. of oil an hour through tubing at 6,510 feet, total depth. Both wells are producing from Dolomite.

Work has started at a wildcat north of the Keokuk Falls pool and east of Prague in Lincoln County. It is W. R. Ramsey and others No. 1 Parks, SE cor. section 22-12-6, on a 600-acre spread owned by the Ramsey and Heenan-Coe interests. It is on a subsurface and seismograph structure, and is to be a Wilcox sand test. Other companies owning leases in the area include Sinclair Prairie, Wilcox, Mid-Continent Petroleum, Gulf, Phillips, Ohio, Texas, Turman, Sun and E. L. Maddox.

Cleveland County

In the Moore field, Cleveland County, Stanolind Oil & Gas Co. and Amerada Petroleum Corp. No. 3 State Tract, SW SE NW section 16-10-2w, was completed with an estimated potential of 1,050 bbls. per day. First Wilcox sand topped at 7,152 feet, total depth 7,295 feet, but plugged back to 7,270 feet and pipe perforated at 7,158-77 feet.

Payne County

An outpost to the Ramsey pool Payne County was dry and abandoned. It was Sun Oil Co. and Loffland Bros. No. 1 Scafe, SE SE NE section 12-18-1e, which was drilled to 4,968 feet. A drill stem test at 4,940 feet, open 30 minutes, developed 4,200 feet of salt water. No Wilcox sand was reported. J. E. Crosbie, Inc., abandoned the location for No. 2 Houston, NE SE NW section 13-18-1e.

In the Ramsey pool, Mid-Continent Petroleum Corp. and others No. 2 Ramsey, NW SW NW section 18-18-2e, with Wilcox sand at 4,768 feet, total depth 4,800 feet, flowed 655 bbls. the first hour with gas at the rate of 6,587,000 feet per day, and 616 bbls. the second hour with gas at the rate of 7,900,000 feet per day.

Garfield County

In the old Garber pool, in Garfield County, Sinclair Prairie Oil Co. No. 29 Walker, got Hotson sand at 1,419-38 feet, shot it with 15 quarts, and has a 20-bbl. pumper. The oil has a gravity of 51 degrees A.P.I.

Creek County

Whitehill and others No. 8 Morrison, 570 feet south and 660 feet west of C section 8-18-11, Glenn pool, Creek County, is a 13-bbl. completion from Glenn sand at 1,743-75 feet.

Osage County

Coralena Oil Co. No. 1 SE SW NE section 36-26-8e, Osage County, was dry and abandoned at 2,346½ feet.

R. Branstetter made a location for No. 1, 200 feet north and 300 feet west of SE corner section 2e 22-11 and for No. 1, 330 feet from north and 810 feet from west lines of SW quarter section 5-21-11.

Estimated Daily Production

Estimated daily production for Oklahoma for the week ending April 30 and for the preceding week was as follows:

	Barrels	
	April 30	April 23
Allen	5,625	5,550
Billings	7,475	7,200
Burbank	7,325	7,350
South Burbank	10,600	10,500
Balance Osage	18,650	18,700
Blackwell district	4,850	4,525
Bristow-Slick	6,875	6,925
Chandler	2,200	2,325
Crescent	5,850	6,400
Cromwell	3,025	3,050
Cushing-Shamrock	10,725	10,700
Duncan district	3,725	3,700
Edmond	7,050	6,925
Fish	3,675	3,625
Fitts	50,825	55,050
Jesse	3,350	3,175
Graham	4,225	4,250
Gray	1,050	1,075
Healdton	8,650	8,700
Hewitt	3,450	3,500
Keokuk	5,375	5,450
Konawa	1,400	1,375
Lucien	11,675	11,775
Moore	5,250	6,600
Oklahoma City	101,750	123,475
Olympic	6,550	6,700
Ramsey	850	1,025
Sasakwa	1,750	1,750
Sholem-Alechem	2,950	2,950
Seminole district:		
Bowlegs	9,650	9,575
Carr City	3,850	3,800
Dora	5,375	5,725
Earlsboro	5,250	5,200
South Earlsboro	575	575
East Earlsboro	5,475	5,550
Little River	8,225	8,175
East Little River	875	825
Maud	750	775
Mission	1,700	1,700
Seminole	8,600	8,275
East Seminole	1,875	1,900
Searight	3,425	3,325
Total Seminole	55,625	55,400
St. Louis-Pearson	20,750	20,050
Tatums	3,700	3,725
Tonkawa-Garber-Thomas	4,250	4,225
Wewoka	2,475	2,450
Yale-Jennings	3,775	3,750
Other pools	76,550	75,500
Total Oklahoma	473,875	499,425

Okfuskee County

In Okfuskee County J. O. Hayes and others No. 2 Durkes, SW SE SW section 21-10-11 was completed as a 30-bbl. pumper from sand at 3,239-45 feet, shot twice with 20 quarts.

H. V. Woodson and Marydun Oil Co. No. 1 Gilli-

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land, SE SE SW section 24-11-7, a wildcat, was dry and abandoned at 4,505 feet. There was no Wilcox sand.

W. R. Ramsey and others was moving in tools to start a wildcat, No. 1 Parker, SE SE SE section 22-12-6.

Seminole County

Arrow Drilling Co. and Kemrow Drilling Co. No 1 Hudeberg, C E half SW SE section 14-11-6, Seminole County made a 9-bbl. pumper from Booch sand at 3,710-35 feet. It had been plugged back from Wilcox sand at 4,525-28 feet, which contained salt water.

Winkler & McQueen No. 3 Bruner, NE NW NE section 4-6n-6e, Dora pool, was shot with 100 quarts in Boggy sand at 2,773-2,840 feet and flowed 500 bbls. in 24 hours.

Troop & Hall No. 3 Snyder, SE NE NW section 4-6n-6e, Dora pool flowed 1,395 bbls. in 24 hours following a 100-quart shot in Boggy sand at 2,780-2,875 feet. The well flowed 407 bbls. in the first 7 of the 24 hours.

Barbara Oil Co. No. 1 Chapman, NW cor. NE NE NW section 36-5n-7e, in the Allen pool, was dry and abandoned at 2,332 feet.

Vierson No. 4 Factor, SE NW SW section 25-5n-7e, Allen pool, swabbed 185 bbls. in 24 hours and then pumped 156 bbls. in 24 hours from Gilcrease sand at 2,292½-2,313 feet. It was not shot.

J. L. Smith & Co. and others No. 2 Harryman-C, SW SW SE section 33-7-6, Dora pool, was shot with 80 quarts in Boggy sand at 2,810-84 feet and flowed 375 bbls. in 24 hours.

D. B. Malarnee No. 3 Swan, SE NE SW section 33-7-6 Dora pool flowed and swabbed 125 bbls. in 24 hours following a 220-quart shot in Boggy sand at 2,830-2,935 feet.

J. F. Smith No. 4 Norvel, SE SE NE section 32-7n-6e, Dora pool, had Boggy sand at 2,900-81 feet, shot it with 100 quarts, and it swabbed 375 bbls. in 15½ hours, or at the rate of about 575 bbls. a day.

In the Sasakwa pool Texas Co., No. 3 Reed, SE cor. NE SE section 6-6n-8e, was completed in Gilcrease sand at 2,935-3,010 feet. It had been shot, but produced only 10 bbls. of oil and 10 bbls. of water in 24 hours on its completion test.

W. C. McBride, Inc. had rig up for No. 2 Haulsee, NW SW NW section 8-9-7, East Seminole. Grisso Royalty Co. was rigging up No. 1 Johnson, NE SW SW section 27-6-5, a wildcat. Denver Producing & Refining Co. spudded No. 1 Mathis, SW NW SW section 7-6-6, a wildcat. J. F. Smith had started drilling No. 2 Sparks, NW NW SE section 32-7-6, Dora pool. Wood Oil Co. made a location for No. 1 Foster, SW NW NW section 1-8n-6, Bowlegs pool. Sinclair Prairie Oil Co. No. 2 C. Jones, NE SE SE section 9-8n-6, an old well plugged back from 4,103 feet to Gilcrease sand at 3,385-86 feet, pumped 5 bbls. in 24 hours.

Lincoln County

Summit Drilling Co. and Skelly Oil Co. had cellar and pits dug for No. 2 Erwin, SW SW SW section 35-15-2, in the Wellston pool.

Oklahoma County

Ohio Oil Co. made location for No. 5 Messer, SE SW SW section 32-14-3w, Edmond pool.

Okmulgee and Muskogee

In Okmulgee County the following completions were reported: Link Oil Co. No. 9 Russell, NE cor. NE SW section 28-13-14, sand at 1,593-1,643 feet, 10-bbl. pumper; J. L. Selby No. 6-A Doneghy, SE NW NE section 3-14-14, sand at 720-86 feet, 3 bbl. pumper; Texas Co. No. 12 Lewis, SW NE SW section 20-15-14, abandoned at 2,312 feet. It was a hole full of water at 2,310 feet; Smith and others No. 2 Keaton, NE SE NE section 1-14-12, sand at 2,086-2,101 feet, total depth 2,108 feet, shot with 5 quarts, swabbed and flowed 130 bbls. in 24 hours. In Muskogee County Robinson Oil Co. No. 6 Brown, SW NE SE section 18-13-16, sand at 2,077-82 feet, acidized with 1,000 gallons, pumped 18 bbls. in 24 hours. A wildcat drilled by Midco Oil Corp. on the Dunagan farm, SE SE NE section 31-11-19, in southern Muskogee County topped Arbuckle lime at 2,976 feet, but was dry and abandoned at 3,042 feet. It had first Wilcox sand at 2,608 feet and second Wilcox at 2,745 feet.

J. L. Selby had rig up for No. 7-A Doneghy, SE NW NE section 3-14-14. Price & Warner made a location for No. 3-A Warner, NW NE SE NE section 21-14-14. Miller and others No. 1-A Spurgeon, NW NE NE section 36-15-14 was drilling at 638 feet. H. C. Detrick made a location for No. 1-A Anderson, SE SW NW section 15-13-13.

Pottawatomie County

Lake Oil Co. No. 2 Gray-B, NE SE SW section 25-5n-4e, Pottawatomie County, was completed in Viola lime at 2,473-2,581 feet, total depth, which had been shot with 60 quarts on the bottom. The well pumped 100 bbls. the first 24 hours.

Denver Producing & Refining Co. No. 1-A Clour, SW SE SE section 11-7-4 was abandoned at 4,250 feet after the hole filled 500 feet with salt water. Viola lime was topped at 4,075 feet.

Gulf Oil Corp. No. 3 Barton, NW NE NW section 13-7n-4e, St. Louis pool, is a Calvin sand producer at 3,115-28 feet. It was shot with 100 quarts and flowed 152 bbls. the first 15 hours and on the fourth day flowed 194 bbls. through 2½-inch tubing.

Magnolia Petroleum Co. No. 2 Dora Lynn, NE NE NE section 21-7-4 is a 4,500,000-foot gas well from Calvin sand at 3,201-14 feet.

J. F. Smith and others No. 1-A Hines, NW SW NW section 22-7-4 flowed 1,200 bbls. through tubing in 24 hours, cut 3.6 per cent. It is producing from Calvin sand at 3,182-85 feet. It had previously flowed 2,160 bbls. in 24 hours through casing. It has not been shot.

Magnolia Petroleum Co. was building rig for No. 2 McMoran, NE SW NW section 32-11-5. J. F. Smith No. 1 Tarter, NE SW SW section 32-7-5 was rigging up. J. E. Trapp made a location for No. 1 Canfield, NW NW SW section 33-7-5. Denver Producing & Refining Co. No. 5 Cardwell, NE SW NW section 15-17-4, St. Louis pool, old well plugged back from 3,970 feet to 3,500 feet made an 11,000,000 foot gasser from Calvin sand at 3,210-24 feet. Magnolia Petroleum Co. No. 1 Hilton NE NW NW section 22-7-4, old well plugged back from 4,168 feet to Calvin sand at 3,204-13 feet flowed 909 bbls. in two days, new total depth 3,423 feet.

Hughes County

E. H. Moore, Inc. and others wildcat No. 1 Hunter, NE NE NW section 30-4-9 was dry and abandoned at 5,969 feet. It topped McLish sand at 5,705 feet first sand at 5,725 feet and second sand at 5,780-5,858 feet and Wilcox sand at 5,930 feet which showed salt water with a sulfur odor.

Pontotoc County

E. H. Moore, Inc. No. 3-A Mack, 1,015 feet from north and 245 feet from west lines of SE quarter section 28-2n-7e, Fitts pool, Pontotoc County, had Wilcox sand at 4,354-56 feet, total depth, and flowed 1,238 bbls. of oil and 1,060,000 feet of gas in 24 hours.

Blackstock No. 4-B Moody 960 feet east and 210 feet north of SW cor. section 23-2-7 was dry and abandoned at 2,687 feet. Same operator No. 2-B Moody, 280 feet north and 380 feet east of SW cor. section 23-2n-7e, flowed 91 bbls. initially after a 50-quart shot in Cromwell sand at 2,630-49 feet, but pumped 64 bbls. of oil and 38 bbls. of water in a later test.

W. A. Delaney No. 1-A Horn, 860 feet from south and 460 feet from west lines of NW quarter section 23-2-7, set 10-inch casing at 102 feet. Magnolia Petroleum Co. No. 18 Burris-A, SW cor. NW section 27-2-7, old well drilled deeper from 2,510 feet to 2,530 feet, (Cromwell sand), made no increase, flowing 35 bbls. in 24 hours. Magnolia Petroleum Co. made a location for No. 5 Statler, 890 feet from south and 990 feet from east lines of SW quarter section 28-2-7. Carter Oil Co. No. 9 Smith, NW NW SW section 28-2-7, plugged back from 3,534 feet and shot in sand at 2,348-2,458 feet made a 57-bbl. pumper. Ross Henry had started drilling No. 2-A Parker, SW SW SE section 17-4-8, a Senora sand test.

Garvin County

In the Tussy pool, Garvin County, Skelly Oil Co. No. 1 Gibson, SW NW SW section 29-1n-3w, was completed at 2,610 feet after it had been drilled to 3,230 feet. It pumps 34 bbls. per day.

Cox & Hamon made a location for No. 1 Craug, C NW SW SW section 39-1n-3w.

Pittsburg County

Supreme Oil Corp. was drilling at 503 feet in No. 1 Hickey, NW SW NW section 4-2n-15e, a wildcat in Pittsburg County. It is a 1,000-foot test.

Grady County

In the Knox pool, Grady County, T. H. McCasland

(Continued on Page 78)

Central West

By STAFF CORRESPONDENT

Illinois Adds 20 Oil Wells; Dry Wildcats in 7 Counties

MATTOON, Ill., May 2.—Twenty new oil wells were completed in the Illinois fields in the past week, their aggregate initial production of 5,153 bbls. averaging approximately 258 bbls. per well.

Wildcat dry holes were reported from Washington. Richland, Marion, Macon, Franklin, Bond and Effingham counties.

A 322-bbl. well from Benoist sand and another starting at 199 bbls. were feature wells in the Dix pool in Jefferson County, opened by Carter Oil Co. on December 31, 1937.

In the Centralia pool there were as many wells in the sand and not completed as there were on the completed list. The nine new wells in that pool averaged 159 bbls. per well the first 24 hours.

In Richland County, in the deep part of the basin, two of the four completions started at 1,540 bbls. and 1,037 bbls., respectively.

The new work, locations, rigs and drilling wells reported for the first time, numbered 27, or equal to the wells completed.

Road conditions throughout the vast territory included in the Central Coal Basin are much improved, and the expected big summer campaign of outpost drilling should soon be under way.

Wells Completed

In Washington County, Betterman and others No. 1 Jesse, C SE NE section 16-3s-2w, was a hole full of salt water at 1,380 feet and was abandoned at 1,426 feet. Benoist sand was topped at 1,326 feet.

In Richland County, Pure Oil Co. No. 2 Ida Colburn, C N half SW SW section 33-4n-9e, flowed 1,037 bbls. of oil in 24 hours from pay at 2,947½-50 feet, 2,952½-70½ feet, and 2,977-82½ feet, total depth 3,025 feet.

Ohio Oil Co. No. 1 P. and G. Schilling, C S half SE SE section 32-4n-9e, was acidized with 5,000 gallons in pay at 2,946-52 feet and 2,956-58½ feet and flowed 1,540 bbls. of oil the first 24 hours and 1,474 bbls. the second day, total depth 3,015 feet. The well flowed 1,343 bbls. in 24 hours before the acid treatment.

Roberts, Weiss & Delaney No. 1 Johnson, SE SE NW section 29-4n-9e, was abandoned at 3,180 feet. There was a small showing of oil in the McClosky at 3,093-94 feet.

Pure Oil Co. No. 1 S. S. Allard, NW cor. NE SE section 17-3n-9e, flowed 65 bbls. of oil in 24 hours following a 5,000-gallon acid treatment at 2,960-80 feet, total depth 3,039 feet.

Frank Frederick No. 1 Blackburn, CWL NW NW SE section 17-3n-9e, had pay at 2,952-69 feet, total depth, and acidized it with 4,000 gallons. The well pumped 130 bbls. in 21 hours and was pumped off.

Hackman & Harris No. 1 Britt, NW NW NW section 36-4n-1e, Marion County, was abandoned as dry at 1,050 feet.

Ten New Wells in Centralia

In the Centralia field, T. T. Eason and others No. 1 Bachmyer, NW cor. SW NW section 18-1n-1e, Marion County, had Benoist sand at 1,359-69 feet, which was shot with 10 quarts, the well responding with 264 bbls. of oil on the pump in 24 hours. Charles E. Stewart No. 1 Kuester, NW SW SW section 5-1n-1e, was abandoned at 320 feet, reason not ascertained.

In the Clinton County side of the Centralia field, R. Blowers No. 3 Fairview Park, NW cor. NE NW NE section 13-1n-1w, was shot with 30 quarts in Benoist sand at 1,350-86 feet and pumped 150 bbls. of oil in 24 hours. Evans & Johnson abandoned the location for No. 1 Budde, SE cor. NE SE section 13-1n-1w. R. Blowers No. 4 Fairview Park, SW cor. NW NE section 13-1n-1w, is a 100-bbl. pumper from Benoist sand at 1,362-86 feet, shot with 70 quarts. Bell, Riley & Lacey No. 1 Skasick & Bailey, SW cor. SE NE section 13-1n-1w, pumped 164 bbls. the first day after a 15-quart shot at 1,363-87 feet. George Anderson No. 1 Home Building & Loan, CNL SW NE NE section 13-1n-1w, was shot with 5 quarts in sand at 1,354-88 feet and pumped 212 bbls. in 24 hours. Shell Petroleum Corp. No. 1 Allison, NE SW NE section 12-1n-1w, with sand at 1,359-90 feet, was shot with 10 quarts. It swabbed 42 bbls. the first four hours, but is estimated as a 150-bbl. pumper. Muhlbach & Pray No. 1 Penn, SW cor. SE SE SE section 12-1n-1w, was a 30-bbl. pumper from sand at 1,364-84 feet, which had not been shot. Louis Lilly and others No. 1 Penn, NW cor. SE SE SE section 12-1n-1w, pumped 220 bbls. initially from sand at 1,359-86 feet, which had been shot with 10 quarts. Crosby & Gill No. 1 Pfeiffer, SW cor. NE NE SE section 12-1n-1w, started at 145 bbls. a day on the pump from Benoist sand at 1,380-93 feet, shot with 10 quarts.

In Macon County, Warner Brothers No. 1 Peterson, NW NW SW section 3-15n-2e, was abandoned as dry at 1,085 feet.

In Jefferson County, Carter Oil Co. No. 1 Dobbs, C E half NE NW section 10-1s-2e, had Benoist sand at 1,968-83 feet. It was shot with 15 quarts and pumped 322 bbls. in 24 hours. Carter No. 1 Cunningham, C W half SW SE section 3-1s-2e, was shot with 15 quarts in Benoist sand at 1,973-88 feet, and pumped 199 bbls. the first 24 hours.

In Franklin County, Washburn Petroleum Co. No. 1 Neal, C E half SE SE section 6-5s-4e, was abandoned as dry at 3,050 feet. Salt water was uncovered at 3,030 feet.

In Fayette County, Carter Oil Co. No. 1 Wetmore, NW SW NW section 11-8n-3e, pumped 60 bbls. the first day after a 10-quart shot at 1,586-92½ feet. Benoist sand.

In Bond County, O. M. Nethery No. 2 Gullick, C SW NW section 30-6n-3w, was dry and abandoned at 1,030 feet in Ste. Genevieve limestone. Bond County Oil & Gas Co. No. 12 Merry, NW SW SE section 30-6n-3w, had sand at 942-44 feet and produced 1,000,000 feet of gas. It was completed.

Three belated completion reports from St. Clair County show Pioneer Oil & Gas Co. No. 1 LaCroix, NW cor. SW SW NW section 27-1n-10w, good for 100 bbls. the first 24 hours from Trenton lime at 467-72 feet; same company's No. 2 LaCroix, 400 feet northwest of No. 1 and in NE SE NE section 28-1n-10w, started at 200 bbls. a day on the pump from Trenton lime at 468-514 feet, and same company's No. 1 Lindemann, SW SW NW section 27-1n-10w, with Trenton lime at 473-523 feet, was acidized with 500 gallons and pumped 65 bbls. the first 24 hours.

In Effingham County, Graham & Duncan No. 1 Rickers, C N half SE NW section 18-6n-7e, was abandoned at 2,900 feet. Ste. Genevieve lime was topped at 2,785 feet and St. Louis at 2,835 feet. No McClosky sand was reported. Fred Croger abandoned the location for No. 1 Schoenhoff, SE NW SW section 5-8n-7e.

New Work Started

First reports of new operations in the basin included the following:

In Jefferson County, Carter Oil Co. No. 1 Ray Free, C E half SE SW section 3-1s-2e, rig up.

In Jefferson County, Carter Oil Co. No. 1 T. N. Logsdon, C W half NW NE section 15-8n-3e, moving in rotary; Whisenant & Henshaw No. 1 Zanders, SW SE NW section 36-9n-3e, spudded.

In Christian County, Independent Producers & Refiners Co. No. 1 Warren, 320 feet north and east of SW cor. section 23-11n-1e, rig up.

In St. Clair County, Charles Wise No. 1 Tarlton, SE NE SE section 28-1n-10w, had Trenton lime at 471-500 feet and a showing of water at 500-05 feet and will be plugged back. Ohio Oil Co. No. 33 Dyroff, SE SE NE section 28-1n-10w, was drilling at 260 feet.

In Richland County, Pure Oil Co. No. 2 Wade, 990 feet from south and 650 feet from east lines of SW quarter section 33-4n-9e, set 9⅝-inch casing at 225 feet. Pure No. 1 J. L. Fleming-B, C E half SE SW section 8-3n-9e, location.

In Clay County, Nu-Crude Oil Co. No. 1 Gill, near C E half NW SE NE section 17-3n-8e, Clay City, was drilling at 450 feet.

In Wayne County, Pure Oil Co. No. 1 Schiele, C W half SE SW section 22-1n-7e, rig up. Pure No. 1 Gibson, C E half NW NW section 27-1n-7e, set 10-inch casing at 227 feet; Pure No. 1 Stanford, C N half SW NE section 12-2n-7e, moving in rotary; Pure No 1 Bunn Consolidated, C E half NW NW section 16-2n-8e, rigging up rotary.

In the Centralia field, Clinton County, Shell Petroleum Corp. No. 5 Buehler, 1,000 feet from east and 990 feet from south lines of SW quarter section 1-1n-1w, drilling at 835 feet; Adams Oil & Gas Co. No. 3 Baker, 950 feet from south and 1,190 feet from west lines of SE quarter section 12-1n-1w, rig up; Earl Thompson and others No. 1 Butler, NE NE SE section 12-1n-1w, rig up; same operators' No. 1 Chamber of Commerce, NE cor. SE section 12-1n-1w, drilling at 850 feet; Bell, Riley & Lucas No. 1 Pfaff, NE NE NE section 13-1n-1w, moving in rotary; J. L. Burch No. 1 Spittler, NW cor. SW NE SE section 13-1n-1w, drilling at 815 feet; E. E. Lehman No. 1 Garbe, near SE cor. NW SE NE section 13-1n-1w, rigging up rotary; Meyers and others No. 1 Gutzler and others, NW cor. SW NE SE section 13-1n-1w, rig up; Quinsberry No. 1 Ryan, SE NE NE section 24-1n-1w, a wildcat, moving in rotary tools. On the Marion County side of the Centralia field, Simmons & McFadden No. 1 McFadden, NE cor. SE NE NE section 7-1n-1e, drilling at 125 feet; George Anderson No. 1 Chasteen, CNL NW NW NW section 18-1n-1e, rigging up machine; J. Q. Gill No. 1 Trust Building & Loan, near SW cor. NW SW section 18-1n-1e, location; W. R. Hayes and others No. 1 Midwest Dairy, SW cor. NE SW section 18-1n-1e, rigging up rotary.

In Clark County, W. R. Miller No. 1 Wilhoit, C NW NW section 19-12n-14w, measuring from Indiana principal meridian, drilling at 120 feet. Friman Equipment Co. No. 1 Olwin, 660 feet from west and 1,120 feet from north lines of section 32-12n-13w, pay at 461-82 feet, 80,000 feet of gas. It will be shot.

Outpost Drilling

Clark County: Stipes and others No. 1 Wilhoit, SW NE NW section 30-12n-13w, was drilling at 250 feet.

Clay County: Kingwood Oil Co. No. 1 Brissenden, C S half SW NW section 8-3n-7e, coring at 3,000 feet, with McClocky still absent; Carter Oil No. 1 Cox, SE SE SW section 14-4n-5e, drilling at 1,609 feet, in lime.

Clinton County: Shell Petroleum Corp. No. 1 Kreft, NE NE SE section 11-1n-1w, a wildcat, Benoist sand at 1,380-89 feet, with salt water and a showing of oil, drilling at 1,500 feet, and will go to the McClosky horizon; Shell Petroleum Corp. No. 2 Allison, SW cor. NW SE section 12-1n-1w, set 4½-inch casing at 1,360 feet, total depth 1,390 feet, and still no Benoist sand; Kesl & Fox No. 1 Dr. Noe, SW cor. NW SE NW section 13-1n-1w, had Benoist sand at 1,398-1,404 feet, but it produced only salt water on the pump. Casing was set at 1,398 feet.

Cumberland County: Jolly Hill and others No. 1 Jenkins, SE NE NE section 30-10n-9e, drilling at 2,280 feet.

In Clinton County: W. C. McBride No. 1 Carson, SW NE SE section 35-2n-1w, spudded.

Edgar County: Sun Oil Co. No. 1 Goodwin, C W half NE SE section 22-13n-12w, drilling at 1,655 feet. Ste.

(Continued on Page 86)

New Pools Are Probable in 3 West Central Texas Counties

By MITCHELL TUCKER

FORT WORTH, Tex., May 2.—The West Central Texas district, where about 100 wildcats or semi-wildcats are drilling, came to the front again last week as possible new producing fields were indicated in Jones, Haskell and Stephen counties.

West Texas operators were concerned particularly with a drastic cut in May allowables, and a later restoration of the cut. Subsequent special orders nullified provisions in the state-wide proration order which practically halved the May allowables for the Bennett, Wasson, Fuhrman, Foster, Harper, Duggan, Dean, Seminole and Slaughter fields. The total represented a reinstatement of 10,079 bbls. Following this order, the railroad commission called a hearing for May 10 at Austin to cover the whole West Texas situation, including physical conditions, transportation, market facilities and demand, reasonableness of allocations as between fields, spacing, etc.

The Wasson field was to have received the most severe cut, from its former allowable of 4,741 to 2,518 bbls. In defense of the former quotas, operators cited that the pool was being drilled on a 40-acre pattern in a 30,000-proven-acre field, and that operations were greatly restricted in order to preserve the present high allowable of about 100 bbls. per well per day.

Wasson-Denver-Bennett Area

The Gaines-Yoakum County area, comprising the Wasson, Denver and Bennett producing fields, and wildcats in most all directions, continues a highlight in West Texas development. Texas Pacific Coal & Oil Co. afforded a half-mile extension to the southwestern limits of Bennett pool production in its No. 7 Ruth Bennett, gauging 1,680 bbls. daily after shooting with 700 quarts, total depth 5,240 feet. This completion will also serve to begin closing the 5½-mile gap between the Wasson and Bennett fields, which some geologists think will eventually prove to be one field.

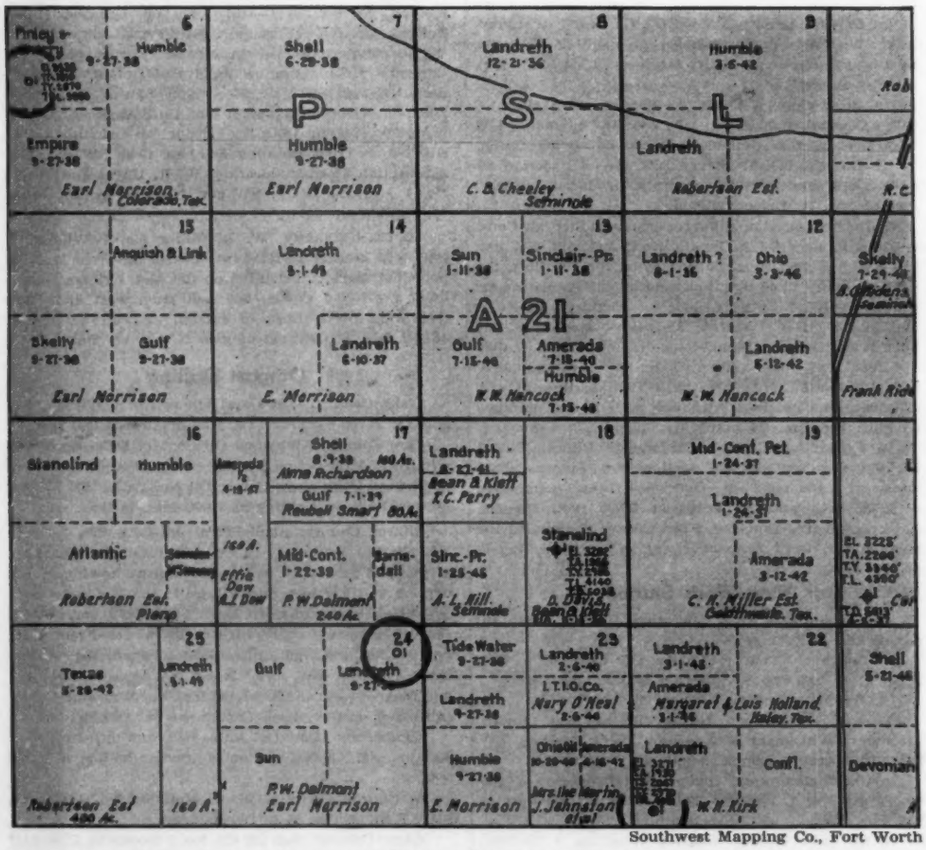
As a possible southwest outpost to the Denver area, Helmerich & Payne, Inc., and Continental Oil Co. No. 1 Sadie O'Dowd, 2 miles south and west of production, has found an estimated 5,000,000 feet of gas at 4,830 feet, and cemented 7-inch casing at 4,759 feet in preparation to drill and test the lower Permian.

Shell Petroleum Corp.'s important northwest outpost from the Denver area, No. 1 Dora Roberts, is coring below 5,100 feet, still in saturated, tight and bleeding lime.

Magnolia Petroleum Co. No. 1 Webb, section 477, Block D, Yoakum County, wildcat about 2 miles west of Plains and 10 miles north of Denver, looked to be dry when porous lime yielded only water while testing. Previously some bleeding oil cores had been recovered, lacking porosity. Present total depth is 5,325 feet.

Gaines County

Attention was turned quickly to Finley & Cherry and others No. 1 Paul W. Delmont, wildcat in south central Gaines County, as porous and saturated lime was cored at intervals from 4,585 feet to its present total depth of 4,865 feet, and coring continues. This well is about 5 miles northwest of the one-well Kirk pool, and about the same distance southwest of the Seminole field in Gaines County.



Southwest Mapping Co., Fort Worth

One-well Kirk pool in south central Gaines County (lower right circled well) and the two important wildcats now drilling near the pay section to the northwest

Andrews County

The H. C. Wheeler No. 1 F. E. Gardner wildcat, about 3 miles west of the Means pool, has logged several important showings of oil, but is now plugging back from 4,646 feet to shut off bottom sulfur water. Showings had been reported from 4,374 to 4,388 feet, with increases at 4,585, 4,596, 4,610 and 4,640 feet.

H. S. Forgeron No. 1 Lockhart and Brown, 5 miles west of Fuhrman production, is circulating in an effort to recover stuck drill pipe at its total depth of 4,030 feet.

Frank S. Perkins No. 1 Cowden (formerly American Liberty Oil Co.), section 14, Block A-55, P.S.L. Survey, proposed 8,000-foot wildcat in southwestern Andrews County, is drilling below 7,236 feet, the deepest well ever drilled in this part of West Texas.

Slaughter Extension

Official gauge of 429 bbls. per day was made by Gulf Oil Corp. No. 1 Gordon, three-fourths mile extension to the southeast of production in the Slaughter field, southwestern Hockley County, total depth 5,074 feet. It was shot with 320 quarts and stage treated with 8,000 gallons of acid.

Ector County

Sinclair Prairie Oil Co. No. 1 Paul Moss, 2 miles south of the west end of Harper pool production, is cleaning out and testing. The well is reported to have flowed 30 bbls. in one hour while cleaning out at 3,945 feet.

Large McElroy Completion

Indicative of the huge potentiality of the proven but undeveloped McElroy ranch in western Upton County, Gulf Oil Corp. No. 171 McElroy gauged 3,490 bbls. per day officially at a total depth of 3,871 feet last week.

WEST CENTRAL TEXAS

Opening of three new oil pools set a seven-day record of wildcat development for the Abilene end of the West Central Texas district the past week.

Producing areas from horizons deeper than usual were found, two in Jones and one in Haskell County. A fourth was indicated by a showing in a southern Stonewall County wildcat.

Attention was centered chiefly on the Haskell discovery of Forest Development Corp. and J. W. McMillen No. 1 A. E. Pardue, 5 miles northeast of Stamford. On a drill stem test it showed 1,300 feet of oil and 60 feet of drilling fluid in 12 minutes from Adams Branch lime, hitherto unproductive in the district, at 2,810-35 feet.

Casing, cemented at 2,854 feet, total depth, was given a four-round shot of gun perforations and at the end of the week the well was slated for treatment with 3,000 gallons of acid. It was an unexpected discovery, the rotary having passed the saturation before oil was noted in the drilling mud. About 12 miles north of the Jones County prolific Avoca field, it is due to receive further development as a likely structure for Canyon and deeper zones. Location is 440 feet out of the northwest corner of the south half of M. Collum Survey No. 4, Abstract 685.

Northwestern Jones County's first oil pool was apparently opened in the Swastika horizon, a sandy lime, by the Mack Hays and Montour Production Co. No. 1 Chittenden Estate, 8 miles northwest of Anson. Saturation was topped at 3,004 feet as the wildcat carried a hole full of upper water, but with pipe set at 2,993 feet for a shutoff, it began filling at a rate

of approximately 100 to 150 feet hourly from a total depth of 3,022 feet, making a three-minute head of 40 bbls. over the mast. Tubing and rods were run for a natural production gauge, but owners indicated the well will probably be treated with acid.

Acreage trading was reported, but no definite deals had been disclosed. The wildcat is near the center of a 2,500-acre block. Spreads were sold inside to Lion Oil Refining Co. and Indian Territory Illuminating Oil Co. Along the north and east edge of the block, the Chittenden estate had leased 1,600 acres to Bass & Goodnight of Los Angeles, Calif.

Official gauge on the East Noodle Creek pool discovery of Humble Oil & Refining Co. was on schedule after its No. 1 I. N. Irwin pumped 73 bbls. of oil and 13 bbls. of water in five hours to open a new Fisher County lime horizon 1½ miles east of the old Noodle Creek field. The pay is 100 feet below the original Jones County horizon, cored at 2,550-67 feet and plugged back to 2,555 feet with cement. Location is 330 feet out of the southwest corner of section 48-18, T.&P. Survey.

Humble moved spudder for a diagonal southwest offset, No. 1 Riley Horton, in the northeast corner of section 40-18, T.&P. Survey, against time of lease expiration.

General Crude Oil Co. ran a string of 8-inch casing to test a showing of oil at 3,970 feet in Fisher County lime in its No. 1 J. D. Smith, southern Stonewall county wildcat located on a seismograph high 12 miles north of the Rotan pool. Free oil showed through 50 feet of caving hole at that depth. Location is 330 feet out of the southeast corner of section 371-2, H.&T.C. Survey.

Humble completed a one-location west extension to the Avoca pool in Jones County, No. 1 R. B. Spencer Co., flowing 532 bbls. in five hours after 1,000-gallon acidization at 3,197 to 3,218 feet.

In northern Stephens County, Horwitz, Odom & Perkins No. 1 Dance, 10 miles northwest of Breckenridge, seemed to definitely open a new producing field as it flowed at the estimated rate of 1,000 bbls. daily after acidizing with 4,000 gallons in saturated Caddo lime, 3,563-93 feet. Location is 4 miles west of Crystal City, and 4 miles northwest of production in the Breckenridge pool.

WEST TEXAS COMPLETIONS

(24-hour gauges)

Andrews County

Humble Oil & Refining Co. No. 3 B. S. Walker, 4,329-4,470 feet, 140 bbls.; No. 41 J. S. Means, 4,500-36 feet, 160 bbls.; No. 42 J. S. Means, 4,500-36 feet, 288 bbls.

Cochran County

Devonian Oil and others No. 2-A T. B. Duggan, 5,019-71 feet, 173 bbls.

Crane County

Texas Co. No. 3-A University, 3,476-3,587 feet, 232 bbls. Gulf Oil Corp. No. 29 Crier-McElroy, 2,760-2,955 feet, 1,149 bbls.

Ector County

J. A. Worsham No. 2 Connell, 2,760-2,955 feet, 679 bbls. Schermerhorn No. 3-B Johnson, 4,040-4,220 feet, 602 bbls. Atlantic Refining Co. No. 1-C Johnson, 4,020-4,150 feet, 612 bbls. Barnsdall No. 15 H. Foster, 4,180-4,280 feet, 1,100 bbls. Texas Pacific Coal & Oil Co. No. 18 Scharbauer, 4,200-53 feet, 2,776 bbls. Landreth Production Co. No. 4-L Scharbauer, 4,150-4,200 feet, 674 bbls. Continental Oil No. 35-B Kloh, 4,230-80 feet, 355 bbls. Gulf Oil Corp. No. 81 Goldsmith, 4,070-4,195 feet, 1,868 bbls.; No. 86 Goldsmith, 4,125-95 feet, 1,774 bbls. Amerada No. 8 Cummins, 4,175-4,240 feet, 752 bbls. Gulf Oil Corp. No. 88 Goldsmith, 4,187-4,260 feet, 2,020 bbls.; No. 89 Goldsmith, 4,122-95 feet, 1,064 bbls. Shell Petroleum Corp. No. 4 Scharbauer, 4,161-4,206 feet, 483 bbls. Gulf Oil Corp. No. 1 J. E. Parker, 4,127-4,275 feet, 81 bbls. Wentz Oil No. 6-D Parker, 4,015-4,230 feet, 937 bbls. Oil-Well Drilling Co. No. 3-A E. F. Cowden, 4,115-4,237 feet, 695 bbls. L. H. Wentz No. 2-A TXL, 3,980-4,201 feet, 2,296 bbls. Barnsdall No. 11 E. F. Cowden, 4,070-4,180 feet, 2,138 bbls. Amon G. Carter No. 2 Parker, 4,090-4,272 feet, 868 bbls. Continental Oil No. 5-27 Rumsey, 4,027-4,171 feet, 2,090 bbls.

Crockett County

Short & Gillette No. 1 Owens, abandoned location.

Fisher County

Sunray Oil Co. No. 1 Snowden-Morrow, dry and abandoned at 3,550 feet. General Crude No. 6 Willingham, 3,100-04 feet, 400 bbls.

Gaines County

Amon G. Carter No. 2 McCarty-Moore, 4,890-5,001 feet, 1,292 bbls.

Howard County

Humble Oil & Refining Co. No. 6 Douthitt, 2,858-2,990 feet, 567 bbls. Sinclair Prairie No. 54 Dodge Estate, 2,485-2,790 feet, 308 bbls. Eastland Oil No. 1 TXL, 2,645-2,847 feet, 994 bbls.

Gulf Oil Corp. No. 1 Gordon, 4,970-5,106 feet, 425 bbls.

Jones County

Danciger Oil & Refining Co. No. 1 Fain-McGaha, 1,928-52 feet, 319 bbls.

Taylor County

Adair-Dunn No. 1 A. C. Pittman, dry and abandoned at 1,937 feet. E. P. Campbell No. 1 H. James and J. McGee, dry and abandoned at 2,771 feet.

Mitchell County

Magnolia Petroleum Co. No. 10 Foster, 2,725-2,852 feet, 58 bbls.

Pecos County

Butler & Daniel No. 1 Lowry, 2,040-2,116 feet, 5 bbls.

Tom Green County

Humble Oil & Refining Co. No. 1 Lewis & Wardlaw, dry and abandoned at 7,586 feet.

Winkler County

Texon Oil & Gas Co. No. 1-39 E. W. Cowden, 2,840-2,993 feet, 165 bbls. Atlantic Refining Co. No. 11 Lovett, 2,970-3,153 feet, 343 bbls. Texas Pacific Coal & Oil Co. No. 4 R. C. Thornberry, 2,647-3,065 feet, 991 bbls. Magnolia Petroleum Co. No. 148 Walton, 2,830-2,930 feet, 1,450 bbls.; No. 149 Walton, 2,833-2,960 feet, 1,567 bbls. J. R. Sharp No. 2 Cities Service-Walton, 3,340-78

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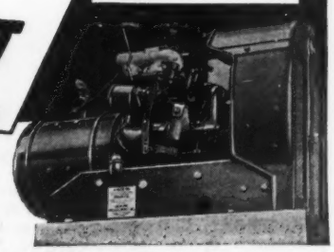

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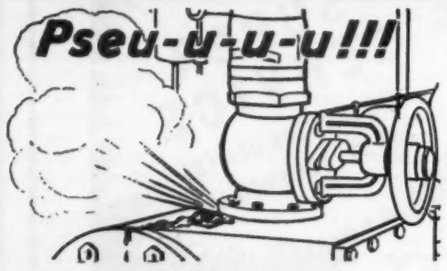

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feet, 400 bbls. S. W. Richardson No. 11-B Humble-Walton, 3,275-3,415 feet, 145 bbls. Magnolia Petroleum Co. No. 147 Walton, 2,855-2,948 feet, 543 bbls.

Upton County

Cardinal Oil No. 1 Wooly, 2,118-60 feet, 4 bbls. Humble Oil & Refining Co. No. 13-B Ricker, 2,645-78 feet, 443 bbls. Blaine No. 5 Powell, 2,490-2,536 feet. 924 bbls. Gulf Oil Corp. No. 17 Shirk, 2,300-2,419 feet, 758 bbls. Flippen & Hancock No. 1 Shirk, dry and abandoned at 2,920 feet.

Ward County

Humble Oil & Refining Co. No. 36 Richter, 2,850-2,930 feet, 818 bbls. Gulf Oil Corp. No. 102 Hutchins, 2,570-2,750 feet, 2,503 bbls. C. W. Clark & C. I. Weldon No. 1 Beatty, 2,444-92 feet, 30 bbls.

Yoakum County

Mid-Continent Oil Co. No. 3 Bennett, 5,040-5,240 feet, 1,800 bbls. Toddie L. Wynne, trustee, No. 4 N. W. Willard, 4,861-4,998 feet, 232 bbls. Sun Oil Co. No. 2 Lynn, 4,850-5,069 feet, 441 bbls. Bahago & Bond Oil Corp. No. 1 J. L. West, dry and abandoned at 5,503 feet.

WEST CENTRAL TEXAS COMPLETIONS

Jones County

Fondren No. 1 Cox-Manley, abandoned as dry at 2,062 feet, total depth.

Shackelford County

Frank Whitten and D. L. Byars No. 1 Diller, abandoned as dry at 533 feet, total depth. Thomas Wittmer No. 3 H. A. Lones, abandoned as dry at 811 feet, total depth. A. B. Bissey No. 1 M. Smalley, abandoned as dry at 623 feet, total depth.

Callahan County

Pueblo No. 3 C. B. Snyder (old producer), abandoned as dry at 1,172 feet, total depth.

Throckmorton County

Moutray No. 5 H. C. Herron, abandoned as dry at 502 feet, total depth.

Fisher County

General Crude Oil Co. No. 6 T. Willingham, pumped 390 bbls. net oil (26 per cent of fluid) after 2,000-gallon acidization at 3,103-04 feet, total depth.

Southwest Texas Fields

(Continued from Page 67)

with their total depth and initial 24-hour production of the producing wells were as follows:

Bee County

North Normanna field: Dirks Brothers No. 1 Nelson, 4,244 feet, abandoned. Plummer field: McBride No. 4 Schneider, 3,055 feet, 1 bbl. oil, 320,000 feet of gas, one-eighth inch choke.

Brooks County

Alta Mesa field: Standard Oil Co. of Texas No. 12 Mestina Oil & Gas Co., 2,509 feet, 276 bbls., pumping. Alta Verde field: Bishop & Woods No. 1 Powers, 3,590 feet, abandoned. Luling field: Trio Oil Co. No. 1 Hibbetts, 2,073 feet, 25 bbls. per hour, half-inch choke. Salt Flat field: Bertrand No. 1-C Davis, 2,691 feet, 150 bbls., pumping.

Duval County

Benavides field: Bridwell Oil Co. No. 13 Ancira, 4,795 feet, 120 bbls., one-eighth inch choke. Humble Oil & Refining Co. No. 2 Moyer, 5,419 feet, abandoned. Republic Production Co. No. 7 Buoy, 5,348 feet, plugged back 4,760 feet, perforated casing 4,744-48 feet, 85 bbls., one-eighth inch choke. Hoffman field: Cox & Hamon No. 7 Green, 2,735 feet, 60 bbls., jetting with gas; No. 13 Cuellar Points, 2,814 feet, 80 bbls., jetting. Gulf Stream Oil Co. No. 1-C Hoffman, 2,877 feet, abandoned. Piedra De Lumbre field: Magnolia Petroleum Co. No. 28 Duval County Ranch Co., 2,040 feet, 15 bbls., pumping. Seven Sisters field: A. J. Brinkoeter No. 8-A Garcia, sand 2,655-61 feet, 71 bbls., half-inch choke. Reynosa Oil Co. No. 6 Welder, sand 2,629-41 feet, 240 bbls., quarter-inch choke.

Jim Wells County

Alfred field: Gilcrease Oil Co. No. 1 Adams, 3,632 feet, abandoned. Smith & Storey No. 2 R. Adams, 3,448 feet, abandoned.

Jim Hogg County

Colorado field: E. S. Adams No. 1 Martinez, 3,015 feet, 110 bbls., pumping.

Live Oak County

Lucas field: Houston Oil Co. No. 38 Cartwright, 4,552 feet, 1,500,000 feet of gas.

Milam County

Rockdale field: W. A. Jones No. 4 Coffield-Thomas, 684 feet, 10 bbls., pumping.

Nueces County

Luby field: Seaboard Oil Co. No. 7 Luby, 7,495 feet, abandoned. Sun Oil Co. No. 1 McCann, 5,065 feet, perforated casing 5,060-63 feet, 106 bbls., 7/64-inch choke. Saxet field: B. H. Hilburn, 4,470 feet, abandoned. West Saxet field: Conroe Drilling Co. No. 1 Morgan, 7,097 feet, abandoned. Rand Morgan No. 2 fee, 5,673 feet, plugged back 3,855 feet, 113 bbls., 5/32-inch choke. Renwar Oil Corp. No. 1-B Kennedy, 5,814 feet, perforated casing 5,805-09 feet, 620 bbls., 11/64-inch choke. South Minerals Corp. No. 5 French, 5,664 feet, perforated casing 5,614-16½ feet, 312 bbls., three-sixteenths inch choke.

San Patricio County

East White Point field: Plymouth Oil Co. No. 1 Kellogg, 5,666 feet, perforated casing 5,664-66 feet, 224 bbls., 9/64-inch choke

Webb County

Killam field: O. W. Killam No. 8 Garcia, sand 1,979-85 feet, 20 bbls. per day. O'Hern field: O. W. Killam No. 62 Bruni, 3,438 feet, perforated casing 3,284-87 feet, 240 bbls., three-sixteenths inch choke. Magnolia Petroleum Co. No. 47 Benavides, 3,620 feet, abandoned. Oilton field: Cox & Hamon No. 3 Long, 1,981 feet, dry gas well. Oil Well Drilling Co. No. 3 Garcia, 2,011 feet, abandoned.

Zapata County

Comitas field: McKay & Upschurch No. 1 Haynes, 1,117 feet, 40 bbls., pumping.

Victoria-Calhoun Counties

Heyser field: George Echols No. 9 W. H. Bennett, 5,749 feet, perforated casing 5,482-87 feet, 134 bbls., 9/64-inch choke. Gulf Oil Corp. No. 4-B Traylor, 6,046 feet, perforated casing 5,589-90 feet, 98 bbls. in 12 hours, five-sixteenths inch choke. Sinclair Prairie Oil Co. No. 11 W. H. Bennett, 5,512 feet, perforated casing 5,482½-88½ feet, 11 bbls., one-eighth inch choke.

Oklahoma Fields

(Continued from Page 74)

No. 1-A Macklenburg NE SE SE section 6-3-5w was completed at a total depth of 3,651 feet. It made only a 12 bbl. pumper producing from 3,298-3,321 feet and 3,612-3,647 feet.

Caddo County

In the Cement pool, Caddo County, Magnolia Petroleum Co. made a location for No. 3 Pickert Edwards SE SW SW section 25-6-10w.

Jefferson County

J. Ray Stebbins had material on the ground for a wildcat test No. 1 Bourland, SW SW SE section 24-7s-4w. It will be a 5,000-foot, or Ellenburger lime, test.

Carter County

Shell Petroleum Corp. made a location for No. 20 Horton, 130 feet north and 825 feet east of C section 6-4s-3w, Healdton pool.

Tillman County

Russell & Ray No. 1 Hasley, C NW NE NW section 4-1s-19w, Tillman County wildcat was dry and abandoned at 2,754 feet.

Stephens County

Gulf Oil Corp. No. 15 Bowers, SE SW NW section 13-2s-4w was dry and abandoned at 752 feet.

George L. Pace and others were rigging up rotary for No. 18 Allen, 600 feet from south and 987 feet from east lines of NE quarter section 3-2s-8w, Empire pool.

North Louisiana, Arkansas

By GEORGE WEBER

Revised Proration Figures in Louisiana-Ark. Flush Areas

SHREVEPORT, May. 2.—New proration developments continued to receive much attention during the past week in Louisiana and Arkansas. A partial reversal of the downward cut in South Miller County, Arkansas, allowable somewhat tempered the drastic reduction of last week. The Lisbon field of Claiborne and Lincoln parishes, Louisiana, received a substantial cut, due to reduction in pipe line purchases.

A number of deep wildcats are drilling at present in the two states, and some of them, having reached critical depths, are being given close attention by local operators. Little of importance in the line of field development occurred during the week.

Following closely the original announcement of a cut in Miller County Rodessa allowable production, came a second corrective order partly restoring some of the allowable. The first order placed a maximum allowable production per day per well of 200 bbls., based on 20-acre spacing. This gave a total field allowable of 6,681 bbls. per day after correction was made for the allowed 3,500 to 1 gas-oil ratio.

The subsequent order revises the maximum per well allowable to a 10-acre spacing basis, making the total maximum allowable for any well 292 bbls. daily, bringing the total field allowable to 8,588 bbls. daily after deductions were made for exeecessive gas-oil ratio production. The May schedule based on the new order may be followed by a further cut in June.

Shuler Proration

Shuler proration will be considered late this week after results of a bottom hole pressure survey made in the Jones sand of that field is studied by members of the conservation board. The survey revealed that the reservoir pressure, as reflected by the bottom hole pressures of ten key wells in the Jones sand, had declined 66 lbs. since the last survey on March 31. Total production during the intervening period was 433,704 bbls., and the barrels-per-pound drop in pressure was 6,571 as against 2,536 on January 31; 5,308 on February 28 and 6,231 on March 31.

An important development in Shuler came in the past week when the Lion Oil Refining Co. announced that effective May 1, it would suspend running Shuler crude other than its own production. The company has been moving the greater share of the crude out of the field through its line to El Dorado. The agreement during the early development of the field, was that Lion take the production of other operators until such time as the field should be proven a major discovery, and production would exceed the company's handling capacity. Effect of this announcement is expected to take form of extension of major lines into Shuler.

In Louisiana, the Caddo Crude Oil Purchasing Co. announced a cut in purchases of Lisbon crude several days ago, which would result in the taking of about 75 per cent of the allowable production. Accordingly, the Louisiana Department of Conservation reduced the Lisbon field allowable for May from 11,000 bbls. to 8,000 bbls. daily. Cotton Valley's Holloway sand, although showing a spotty development, was given 4,000 bbls. daily by the department, with 10 wells in that horizon now producing. The new proration measures in Arkansas and Louisiana have an important effect on future drilling and production.

Shuler Edge Completions

The north edge of the Shuler field is gaining attention, with the completion during the past week of two good wells. The Lion Oil Refining Co. No. 1 Mayfield, which last week cored the Jones sand at 7,520-94 feet came in making 837 bbls. per day on a 10/64-inch choke. Tubing pressure was 1,580 pounds and casing pressure 1,630 pounds. The total depth is 7,690 feet. The well, if allowed to flow open would produce several thousand barrels per day, and it is considered one of the best to have been completed in the field. Its location north of production augments the importance of the test, in indicating a considerable extension in that direction. The Texas Canadian No. 1 Powledge, another edge test, topped the lime at 7,665 feet and shows indications of being a big producer. Although Shuler is at present one of the most active drilling fields in the district, the curtailment of pipe line purchases and possible reduction of allowable may tend to decrease the volume of drilling in the next several weeks.

Estimated Daily Production

Estimated daily gross production all companies week ending April 30:

NORTH LOUISIANA

	Barrels
Bellevue	700
Caddo light	3,900
Caddo heavy	2,385
Converse	575
Cotton Valley heavy	100
Cotton Valley light	*7,950
De Soto and Red River	1,445
Elm Grove	295
Haynesville	2,930
Holly	95
Homer	2,660
Lisbon	7,550
Pleasant Hill	105
Rodessa	41,675
Sarepta-Carterville	220
Sligo	20
Sugar Creek	325
Urania	2,780
Zwolle	1,005
Total	76,715

SOUTH ARKANSAS

Buckner	405
Champagnolle	1,205
El Dorado	1,875
Lisbon	265
Miller County	375
Nevada	650
Rodessa	7,235
Shuler	21,260
Smackover light	2,035
Smackover heavy	15,890
Stephens	540
Troy	1,255
Urbana	1,225
Village	305
Total	54,520

Texas side of Rodessa field 37,770 bbls. daily.

*4,140 bbls. is distillate.

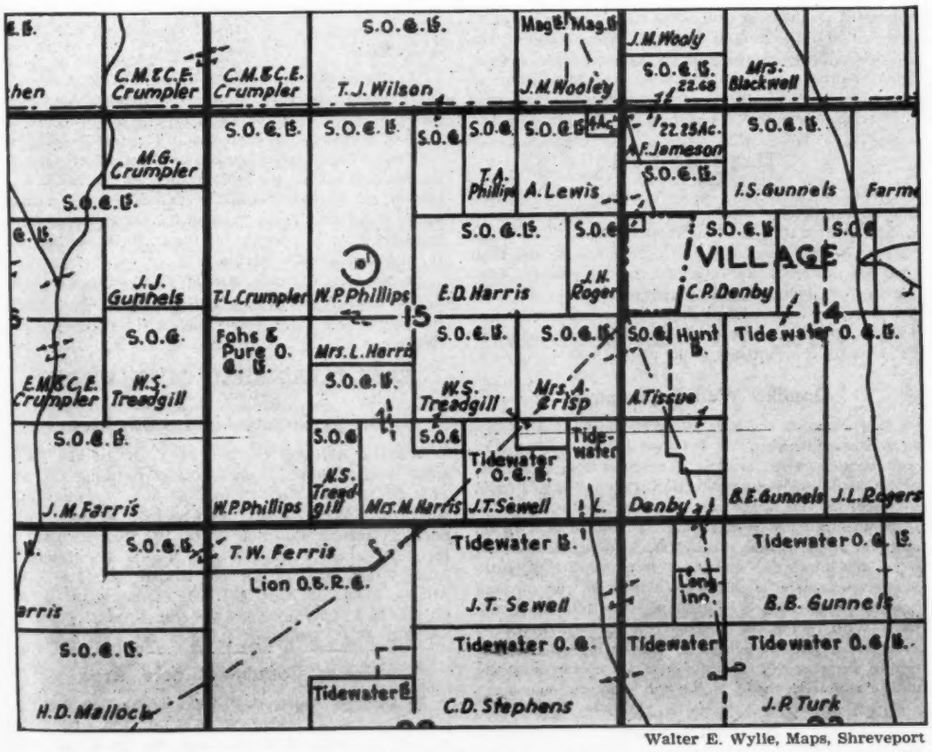
Village Test

The most interesting wildcat test in South Arkansas is currently the Standard Oil Co. of Louisiana No. 1 Phillips, located east of the Kerr-Lynn discovery at Magnolia. The wildcat was last reported drilling in shale and sand at 7,237 feet. The test had good showings in shallower formations, but is being carried to the Smackover lime which produces to the northeast in Shuler, and northwest and west in Buckner and Magnolia respectively.

Shongaloo Test

A deep wildcat well in northern Webster Parish, Magnolia Petroleum Co. No. 1 Sexton Unit is drilling and coring below 9,602 feet. The test, located in the

(Continued on Page 96)



Walter E. Wylie, Maps, Shreveport

Village area of eastern Columbia County, Arkansas, is being watched with interest as the Standard Oil Co. of Louisiana No. 1 Phillips approaches the Smackover lime. The wildcat is east of the Kerr-Lynn discovery at Magnolia, and northwest of the Shuler field of Union County

North and East Texas

By MITCHELL TUCKER

Increase K. M. A. Allowable; Water Problem in East Texas

WICHITA FALLS, Tex., May 2.—The K.M.A. field received the largest increase in daily allowable of any pool in Texas on the new May 1 proration schedule. Daily allowed production was raised from 9,784 bbls. in April to 16,223 bbls. in May to cover new completions. During the past week there were 25 wells completed in the field for an aggregate initial production of 22,421 bbls. Twenty-one new locations were staked last week making the total number 60. There are eight pits dug and 40 rigs up. The total number of drilling wells in the field is 181.

The possibility of Ordovician production in Archer County held most of the attention in the North Texas area last week. Since the deep Strawn sand Panther pool discovery in Archer County, several other tests have attempted to reach the same pay horizon. Last week the Blackwell Oil & Gas Co. and Helmerich & Payne, Inc. No. 2 Wilson, 1,000 feet southeast of the discovery well, working toward completion of a 5,300-foot contract, found oil saturation at 5,078-5,108 feet, which was believed to be the Ellenburger, or possibly a detrital zone at contact of the Ellenburger. Casing has been cemented and operators will drill plug some time next week. Should this test make a producer from the Ordovician it will stimulate a general deepening campaign for much of North Texas.

The second producer for the Panther pool of Archer County was indicated last week when Blackwell Oil & Gas Co., Helmerich & Payne, Inc. and C. B. Christie No. 1 Wilson, section 25, A.T.N.C.L. Survey, north offset to the discovery, flowed 63 bbls. of oil an hour for three hours and was shut in for potential gauge. Bottomed at 3,865 feet, the well encountered saturation from 3,852-62 feet.

Reno Oil Co. No. 10 Wilmont, northeast corner of Lot 1, section 4, S.P. Survey, 2 miles southwest of the discovery well, was waiting for cement after setting pipe at 3,750 feet, total depth. Showings of oil were found from 3,762-78 feet and from 3,831-40 feet.

C. W. Snoddy and others No. 1 Jones-Cullum, southwest corner of the T. Freeman Survey, Abstract 134, 3 miles northwest of the discovery well, was waiting for spudder to drill plug from casing. The wildcat found 15 feet of saturated lime topped at 4,066 feet.

Thurman & Lipscomb No. 1 Wilson, Block 1, section 22, A.T.N.C.L. Survey, 1 mile northwest of the discovery well, has cemented casing at 3,941 feet after an electrical survey of the hole revealed a saturated zone from 3,941-58 feet.

K.M.A. Pool Proper

In the K.M.A. pool proper, an increase in activity was noted as two new extensions were in sight at the close of the week. Clark & Cowden No. 1 Waggoner, A. Gibson Survey, Abstract 455, 2½-miles outpost on the west side of the pool, which had been abandoned about a week ago as a failure, was showing promise of making a small producer. After standing for 20 days the hole filled 700 feet with oil, was shot with 100 quarts from 3,633-70 feet, and is now being completed.

A 2-mile southwest extension on the northwest edge of the pool was indicated when A. McCutchins No. 1 Waggoner, section 33, Block 7, H.&T.C. Survey, cored saturation at 3,873-3,918 feet. Casing is set on top of the saturation, and plug will be drilled this week.

New promise was also given to a doubtful sector when R. B. Bryant No. 1 G. L. Nance, S. O. Fowler Survey, Abstract 78, 1 mile north of the Hammon No. 1 Bradley failure, began flowing by heads from sand and lime from 3,700-3,853 feet. Casing is set at 3,700 feet.

Other North Texas Counties

Several major oil companies, propelled by the large development in K.M.A. and the recent Panther pool discovery in Archer County, are continuing to take large blocks of acreage in the North Texas area. Superior Oil Co. has acquired a block of approximately 4,500 acres, centering around the little town of New York City, southeast of Henrietta in Clay County. In Archer County, Shell Petroleum Corp. and Superior Oil Co. have taken acreage around the Adams Oil & Gas Co. No. 1 T. Moer, a wildcat in section 1, Clark & Plumb Subdivision, Block 3. Shell took 565 acres on the west and south side of the well, while Superior took two 60-acre tracts, one on the north and the other on the south of the well.

Cooke County

Northeast of Gainesville about 8 miles, near Red River in the Walnut Bend area, Sinclair Prairie No. 1 J. M. Best, scheduled Ordovician test, is coring below 3,781 feet. Coring began at 2,765 feet, the Collisburg sand horizon, and will continue to 7,000 feet where the Ellenburger of Lower Ordovician is expected to be found.

EASTERN TEXAS FIELDS

DALLAS, Tex., May 2.—During the past week there were 46 wells completed in the East Texas field for an aggregate initial production of 2,362 bbls. per hour. Thirty-four new locations were staked, and there are now 113 drilling wells in the field. The field will continue on a daily quotient of 2.32 per cent of hourly potential as their allowable factor for the month of May. The commission has set an allowable for that field in May of 504,835 bbls., a gain of 2,853 bbls. from April 1 to care for new completions. With the East Texas field's salt water production now estimated at about 100,000 bbls. per day, the disposal of this brine is an increasingly important problem. Last week the railroad commission granted Sun Oil Co. permission to experiment with the return of salt water to the Woodbine sand on the west side of the field. This is the third attempt at underground disposal. Humble Oil & Refining Co. is now working on its project to return water to the Paluxy some 1,200 feet below the Woodbine, and the Ohio Oil Co. is continuing experiments somewhat similar to Sun's proposed plans.

Flag Lake Field

Texas Co. gave the Flag Lake pool of northwestern Henderson County a mile southwest outpost when it staked location for No. 1 I. A. Nolan on W. L. Bibbs lands, in the Nathan Parsons Survey. This will be the fifth well for the area, the Texas Co. having recently completed No. 1 Jarrell for the fourth producer in the field. The area has been defined on the northeast side by two failures and the outcome of this wildcat will assist in establishing the southern limits of the field.

Opelika Well Repressured

Reworking of the Tide Water-Seaboard-Humble No. 1 McElreath-Suggett, W. P. Wyche Survey, discovery well in the Opelika area of Henderson County, considerably aided the well's production. Completed as a freak producer in the upper anhydrite section of the Glen Rose, the well has been producing about 8 bbls. of oil daily for almost a year through the bit on the end of the stuck drill pipe. Gas was piped from No. 2 McElreath-Suggett, completed as a gas-distillate well, run through a separator to strip it of gasoline, then jetted into the well. With tubing set at 4,000 feet the well produced 43 bbls. the first 21 hours. By raising or lowering the tubing, gauging will continue at various levels until the most efficient means of production is determined.

Houston County

Peyton Brothers No. 1 Daniels, J. M. Percilla Survey, half mile north of Percilla and about 5 miles northeast of Grapeland in northern Houston County, still has not found the Woodbine sand after coring from 5,940-46 feet, last week. Checking low against the discovery well one-half mile to the south, operators were reaming down preparatory to coring deeper at the close of the week.

Railroad Commission Reports

Contrary to the usual plea for increased allowables, the Tide Water Associated-Seaboard company has asked the railroad commission to cut the allowable of the Cayuga oil field 3,000 bbls. beginning May 1. Reason given was lack of export demand for the low gravity asphaltic base crude. In this field the same operators have been running their stage separation and recycling plant for about 40 days now, and report very successful results. Gas is taken from high structural wells in the Woodbine, run through the newly designed plant to recover a large percentage of distillate, and returned to an intake Woodbine sand well. One 400-horsepower compressor is used for recycling. It is probable that the companies will expand their present plant soon.

A railroad commission survey in the Sulphur Bluff field of Hopkins County shows that out of the 72 wells tested for water production, 35 showed no water at all and 37 showed a combined production of 541 bbls. daily. A similar report on the Talco field of Franklin and Titus counties revealed that all of the 646 wells in the field were pumping and of that number 363 were producing an aggregate of 17,144 bbls. of water daily.

Wildcat Developments

In Gregg County, Humble Oil & Refining Co. and Gulf Oil Corp. No. 1 E. Robertson, M. Mann Survey, 2½ miles southwest of Longview, is drilling below 9,851 feet after recovering only hard black shale in a core from 9,844-48 feet last week.

On the Kelsey dome in Upshur County, Tom Hunter and American Liberty Oil Co. No. 1 J. P. Carter, in the J. H. Fields Survey, is drilling below 8,705 feet in red sandy shale.

In Cherokee County, Bunn & Mayo in No. 1 Bounds, W. H. Walters Survey, 2½ miles southeast of Lone Star, continued their attempts for Woodbine production from a 1-foot section of oil sand at 4,014-15 feet.

Two wildcats were staked in Red River County. Daniels and others are building derrick for No. 1 J. J. Gaston, a 2,500-foot test in the J. Guest Survey, 2 miles south of Detroit. Texas Trading Co. is rigging up No. 1 Southern Pine Lumber Co., in the D. D. Bruton Survey, 12 miles north of Clarksville.

In McLennan County, Russell & Thompson No. 1 L. L. Phillips, C. O. Campo Survey, 4 miles south of Waco, is drilling below 190 feet on a new test started last week.

EAST TEXAS FIELD COMPLETIONS

(One-hour gauges)

Gregg County—Longview Area

Atlantic Refining Co. No. 18 T. B. Harris, 3,492-3,530 feet, 58 bbls. Humble Oil & Refining Co. No. 11-B D. Johnson, 3,606-73 feet, 50 bbls. Lechner-Hubbard No. 7 W. M. Horly, 3,619-30 feet, 90 bbls. Magnolia Petroleum Co. No. 12 G. W. Richey, 3,619-29 feet, 100 bbls. Pernen & Fell No. 4 E. Anderson, 3,623-54 feet, 60 bbls. Sinclair Prairie No. 17-A J. W. Aikens, 3,569-3,621 feet, 44 bbls. Stanolind Oil & Gas Co. No. 15 V. Calvin, 3,546-3,618 feet, 46 bbls. Stoddard No. 2-B J. C. McKinley, 3,635-46 feet, 60 bbls.

Gregg County—Kilgore Area

B. DeMayo No. 5 Exie Benson, 3,737-40 feet, 34 bbls. General American No. 5 J. M. Johnson, 3,539-47 feet, 60 bbls. Gulf Oil Corp. No. 24 R. H. Still, 3,533-44 feet, 15 bbls. Delta Drilling Co. No. 2 Barber Estate and M. B. Hughey, 3,468-95 feet, 40 bbls. T. D. Humphries No. 21 A. Spear, 3,542-67 feet, 70 bbls. T. W. Lee No. 7-C J. R. Carter, 3,587-88 feet, 32 bbls.

(Continued on Page 82)

California Field Report

By
L. P. STOCKMAN

Los Angeles District Again Is Attractive to Wildcatters

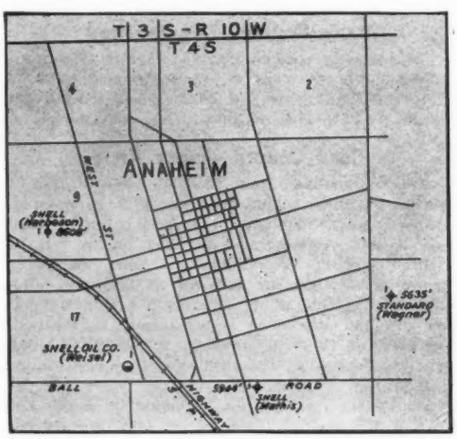
LOS ANGELES, Calif., May 2.—Despite overproduction and depressed consumer demand wildcat operations in California are increasing at a rapid rate. For the first time in several years Los Angeles Basin is receiving considerable attention and numerous leases have been taken at several points. It is almost impossible to visit any particular section of the basin without finding one or more seismograph crews at work. All major companies with one possible exception are centering attention on the basin almost to the temporary exclusion of all other areas. The Rosecrans district is practically leased up entirely since Standard Oil Co. ran a seismograph survey a few weeks ago and followed up this work by an aggressive leasing campaign. Richfield Oil Co. is leasing south of the present productive limits at Rosecrans, while Standard has leased westward. Seismograph work is under way in the Pico area as well as at Montebello and Richfield. The Texas Co. has staked location for a new wildcat in the vicinity of King City in Monterey County where the company leased about 10,000 acres last year. This test will be drilled to determine production possibilities of a Miocene overlap and work will get under way within a few weeks. Richfield Oil Corp. is leasing considerable acreage in the Union Avenue district of Kern County where Western Gulf, Wilshire and Union Oil Co. drilled several wildcats a few years ago. Richfield is running a seismograph survey and the location of the first well will be governed by what is found.

Drilling operations in California are holding up in good shape and if work continues at the present rate for the balance of the year the total number of wells drilled in 1938 will be slightly larger than last year. With the large amount of undeveloped acreage in the Santa Maria Valley field and additional development anticipated in the Rio Bravo, Canfield Ranch, Canal, Montebello and Wilmington fields there is no reason to expect a sudden cessation of drilling. All attempts in the past to retard drilling operations have proved futile although all major companies a few years ago made an agreement to retard wildcat exploratory work for a period of one year and did keep the agreement.

Wilmington

Six wells were completed in the Wilmington field of Los Angeles Basin in the past week and all of them registered substantial production. General Petroleum Corp., discoverer of the Wilmington field, headed the completion list by finishing three wells that showed an aggregate initial daily production of 6,158 bbls. The new wells of this company were No. 38 Ford, completed flowing 1,024 bbls. daily; No. 11 Harbor Community, finished flowing 2,664 bbls. per day; and No. 6 Southern Pacific, completed flowing 2,470 bbls. daily. No. 38 Ford was bottomed at an even 3,000 feet and the hole was finished with 685 feet of 6⅝-inch liner including 496 feet of 50-mesh landed at 2,999 feet and 2,468 feet of 3-inch tubing. The well was brought in flowing through a 40/64-inch bean under a tubing pressure of 170 pounds and a casing pressure of 500 pounds. The oil was clean and tested 21.6 gravity. No. 11 Harbor Community was bottomed at 3,920 feet and finished with a full combination 8⅝-inch and 6⅝-inch string, landed at 3,910 feet and cemented through perforations at 2,830 feet. Top of the 6⅝-inch was at 2,780 feet and this pipe carried perforations at 3,910-3,640 feet, 3,600-3,360 feet, 3,320-2,830 feet and 2,700-2,426 feet. No. 6 Southern Pacific was completed at 4,075 feet and the combination string which was landed at 4,065 feet and cemented through perforations at 3,960 feet and 3,005 feet carried perforations at 2,670-2,875 feet, 3,005-3,330 feet, 3,370-3,460 feet, 3,500-3,730 feet, 3,770-3,820 feet and at 3,960-4,065 feet.

Hancock Oil Co. completed No. 14-A Harbor flowing 2,897 bbls. of clean 25.7-gravity oil daily from 4,050 feet with production coming through a ¾-inch bean. Hancock Oil Co., of which Will Reid is president, has 15 additional locations to drill at Wilmington before closing its development program. The Termo Co. completed No. 4-D Long Beach Harbor Department flowing 3,380 bbls. of clean 26.1-gravity oil daily from 3,890 feet. Production is coming from the Upper and Lower Terminal zones with the Ranger zone blanked off behind casing. Silver-Gate Oil Co. completed a relatively small pumper when No. 1 Wilmington was brought in producing from the Ranger zone at 3,125 feet. This new well started off pumping 284 bbls. after the hole had been finished with 559 feet of 5¾-inch liner including 500 feet of 60-mesh landed on bottom and 3,068 feet of 2½-inch tubing with packer.



Shell Oil Co. is rigging up rotary drilling equipment for a third wildcat to be drilled in the Anaheim district of Los Angeles Basin

Montebello

The Montebello field, where St. Helens Petroleum Co. discovered deeper production in the Miocene in the extreme western end of the field, is rapidly becoming an active area. St. Helens Petroleum has staked locations for three additional wells and Royalty Group, Inc., and Herley-Kelly Oil Co. have made locations at Grandview and Maple Avenue. The new locations of St. Helens are No. 2 Eggleston and Nos. 28 and 29 on the Monterey lease. Late in the week the company made a formation test of No. 24 Monterey with bottom at 5,490 feet and the tester at 5,385 feet, and the well flowed through the tester for 12 hours at the rate of 600 bbls. per day of 35.9-gravity oil, with a cut of less than 1 per cent. This test together with similar tests on other wells indicates that the Pliocene will also be found productive above the present productive Miocene. In addition to the oil, the well flowed gas at a daily rate of 2,000,000 feet, before the crew pulled the tester to core ahead. Union Oil Co. is making a production test on No. 1 Paul Howard with bottom at 6,244 feet and will attempt to secure commercial production from the Pliocene before drilling ahead into the Miocene. Preliminary tests at three points indicated that this zone was wet although it carried considerable oil and gas. Operators in this field are considering the possibility of shutting in all Miocene production for a period of 60 days. McVicker & Rood, who reentered No. 1 Manz, originally drilled by Superior Oil Co. a few years ago, should reach the top of the Miocene in the near future as the bit has just passed the 5,300-foot level.

Torrance

The Torrance field took a new lease on life as a result of the completion recently of a 570-bbl. flowing well, and this has proved to be a powerful stimulant to operators who have been questioning the advisability of deepening small producing wells from the upper to the lower zone. Three wells were completed in the deep zone during the week, and while none of them registered large production the present output is substantially higher than that previously produced from the upper horizon. Elyod Oil Co., of which Jack Doyle is president, completed No. 1 Torrance pumping 184 bbls. of 26.3-gravity oil per day from 4,998 feet after the hole had been finished with 1,600 feet of 4¾-inch liner, including 43 feet of 80-mesh landed on bottom and cemented through perforations at 4,950 feet. Torrance Oil Co. No. 1 Grubb has been completed pumping 118 bbls. of 26.2-gravity oil daily from

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	April 22		April 15			
Intercoastal-domestic—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Crude oil	.....	.....	.....	.....	70,180	.....
Diesel and gas oil	.....	.....	.....	.....	.....	176,726
Gasoline	.....	.....	.....	.....	870,595	905,835
Kerosene	.....	.....	.....	.....	132,575	65,030
Foreign exports—						
Crude oil	841,114	120,159	563,127	80,447	7,635,727	4,237,177
Fuel oil	181,980	25,997	158,080	22,583	2,419,301	4,205,409
Diesel and gas oil	154,485	22,069	79,522	11,360	1,451,719	2,057,563
Gasoline	215,680	30,811	175,595	25,085	2,005,895	2,405,850
Kerosene	94,488	13,498	.....	.....	405,550	894,236
Other unfinished oil	.....	.....	.....	.....	.....	290,354
Coastwise-domestic—						
Crude oil	162,598	23,228	64,918	9,274	3,770,698	1,951,339
Fuel oil	73,142	10,447	267,337	38,191	3,590,150	4,436,155
Diesel and gas oil	132,079	18,868	52,311	7,473	602,547	851,499
Gasoline	154,105	22,015	213,194	30,456	4,484,614	3,766,770
Kerosene	4,458	637	18,389	2,627	106,043	57,387

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic—						
Diesel and gas oil	.....	.....	.....	.....	178,662	152,932
Gasoline	.....	.....	.....	.....	9,499	25,778
Asphalt	71,141	10,163	.....	.....	144,590	.....
Lubricants	.....	.....	.....	.....	3,009	6,848
Foreign exports—						
Crude oil	240,661	34,380	509,546	72,792	1,815,691	907,349
Fuel oil	54,440	7,777	73,006	10,429	647,123	591,615
Diesel and gas oil	32,445	4,478	62,495	8,928	525,188	1,001,312
Gasoline	.....	.....	195,577	27,940	1,427,162	1,795,034
Kerosene	.....	.....	80,019	11,431	213,346	252,035
Lubricants	.....	.....	.....	.....	145,340	234,631
Coastwise-domestic—						
Fuel oil	135,198	19,314	142,826	20,404	2,066,582	1,898,520
Diesel and gas oil	.....	.....	37,144	5,306	509,155	197,308
Gasoline	102,591	14,656	94,368	13,481	1,914,303	1,354,374
Kerosene	.....	.....	.....	.....	235,760	41,340

4,978 feet after the oil string had been perforated at 4,843-90 feet and 4,920-78 feet. No. 2 Redondo of the Texas Co. has been recompleted pumping 68 bbls. of 14.8-gravity oil daily after the hole had been deepened to 3,628 feet. This well was not carried down to the new deep zone. McDonald & Burns, who finished the large flowing well that focussed the attention of operators on the Torrance field last week, are making preparations to redrill and deepen Nos. 5 and 8 on the Moore lease which offset No. 3 Moore, the deep well.

Coastal Area

In the Rincon field of Ventura County, Chanslor Canfield Midway Oil Co. completed two good wells on the Hobson lease and will probably undertake additional drilling in the immediate future. The company's new producers were No. 19-B, flowing 291 bbls. of relatively clean 29.1-gravity oil daily, and No. 22-B finished flowing 248 bbls. of clean 27.8-gravity oil per day. The former was bottomed at 4,242 feet but plugged back to 4,111 feet, while the latter was finished at 4,250 feet with a 6⅝-inch liner. No. 19-B, which is flowing through a 32/64-inch bean, is making 620,000 feet of gas along with the oil. No. 22-B was brought in flowing through a ½-inch bean and is making 281,000 feet of gas with tubing and casing pressures at 185 pounds and 90 pounds, respectively.

In the Ventura Avenue field, both Shell Oil Co. and Tide Water Associated Oil Co. are starting new wells and contemplate deepening a few wells that have been producing from the upper zone for several years.

The Santa Maria Valley field continues to occupy the spotlight in Santa Barbara County due to the completion of new large wells and the starting of additional wells. Union Oil Co. No. 1 Silva, in the west side of the Santa Maria Valley field, which has been shut in since completion a few weeks ago, has created considerable interest due to the gravity of oil produced. This well produced an oil testing 18.1 degrees which is more than 1 degree higher than any other crude yet found in the field. This well will necessitate the drilling of several offsets and subsequent completions may show much larger production. The Continental Oil Co., which acquired acreage in the Los Olivos district of Santa Barbara County several months ago, has made a tentative location 6 miles due north of the town of Los Olivos in section 24-8-31.

Kern County

Shell Oil Co. completed No. 2-A Kern County Land in the Canal field of Kern County flowing 2,574 bbls. of very clean 35.6-gravity oil and 3,000,000 feet of gas per day from 8,350 feet after the hole had been carried down to 8,391 feet and then plugged back to the completion depth because of bottom water. The hole was finished with a string of 5-inch casing landed at 8,344 feet and perforated at 8,173-8,282 feet and 8,297-8,344 feet and was cemented through perforations at 8,170 feet. This new producer is located northeast of Ohio Oil Co.'s discovery well in the field. Shell No. 81-A Kern County Land, in section 14-30-25, is standing cemented on top of the pay with bottom of the hole at 8,347 feet. Standard Oil Co. No. 11-2 Kern County Land, in the Greeley field of Kern County, has reached a depth of 11,195 feet, but has not yet found the Rio Bravo zone.

In the Ten Section field, Shell Oil Co. completed No. 41-29-A Kern County Land, section 29-30-26, flowing 2,637 bbls. of clean 34.1-gravity oil and 2,100,000 feet of gas per day from 8,220 feet. Tubing pressure which is building up is 130 pounds and casing pressure 1,240 pounds. It extends production one location northeast in addition to proving up another location farther out. The well is open to production from 7,950 to 8,220 feet as it was finished with a 5-inch perforated liner.

Midway-Sunset

In the Midway-Sunset field, M. H. Whittier Co. completed No. 16 Hondo in the shallow zone pumping 18 bbls. of 13.5-gravity oil daily from 1,182 feet. It was carried down to 1,286 feet but was plugged back and finished with 367 feet of 6⅝-inch liner including 335 feet of perforated landed at 1,157 feet. Berry & Ewing have picked up the pay in No. 2, in section 31-32-24, at 760 feet and should have this potential producer ready for the beam within a few days. In the Edison field, Wood-Callahan Oil Co. has completed No. 21-2 Community in section 21-30-29 pumping 20 bbls. of 16.7-gravity oil initially from 3,145 feet after the hole had been carried down to 3,675 feet and then plugged back. Western Gulf Oil Co. has completed rigging up rotary at No. 35-B Kern County Land, in the Fruitvale field. Continental Oil Co. will begin drilling a new well in the Wasco district of Kern County about the middle of June. It will be north of the discovery well. Standard Oil Co. will drill an offset to the discovery well of Continental on fee-owned acreage and location is expected to be made within a week. Out on the north edge of the Kern Front section of the Kern River field, Spencer Petroleum Co. has completed No. 4 in section 10-28-27, pumping 89 bbls. of 13.5-gravity oil daily from 2,175 feet after the hole had been finished with 60 feet of 6⅝-inch liner including 48 feet of perforated landed on bottom. Getty Oil Co. is expected to complete a new well in the Rio Bravo field of Kern County before the close of this week as a 7-inch water string has been cemented in No. 1 Ramsey, in section 35-28-25, at 11,370 feet. Top of the Rio Bravo zone was logged at 11,375 feet and

(Continued on Page 96)

East Texas Fields

(Continued from Page 80)

B. F. Phillips No. 5 Greggston Heirs, 3,605-07 feet, 40 bbls. Shell Petroleum Corp. No. 23-A J. Douglas, 3,588-89 feet, 22 bbls.; No. 10 H. T. Neal, 3,522-3,624 feet, 55 bbls. W. Smith No. 2 W. Griffin, 3,545-3,614 feet, 35 bbls. Weaver-Crim No. 15 B. Laird, 3,596-3,614 feet, 1 bbl.

Rusk County—Kilgore Area

Hurricane Petroleum Co. No. 4 H. P. Leverette, 3,656-80 feet, 45 bbls. H. G. Sampson Oil No. 3 T. H. Gill, 3,619-20 feet, 40 bbls. Stanolind Oil & Gas Co. No. 14 J. S. Powers, 3,708-10 feet, 40 bbls.

Rusk County—Joiner Area

Amerada and Deep Rock No. 32 T. J. Stovall, 3,633-62 feet, 68 bbls. R. E. Fair, Inc., No. 17 B. F. Maxwell, 3,660-90 feet, 60 bbls.; No. 5 Rowe-Maxwell, 3,649-90 feet, 60 bbls. Humble Oil & Refining Co. No. 7 L. R. Lindsey, 3,727-47 feet, 75 bbls. L. Hunt No. 24 C. Young, 3,665-87 feet, 78 bbls.; No. 25 C. Young, 3,675-3,700 feet, 44 bbls. R. E. Kennedy No. 2 J. R. Johnson, dry and abandoned at 3,810 feet. McClanahan-Venable No. 48 J. A. Birdwell, 3,594-3,793 feet, 60 bbls. McDonald & Campbell No. 6 Wheelis-Rusk, 3,762-80 feet, 60 bbls. Ohio Oil Co. No. 87 M. M. Cross, 3,640-61 feet, 60 bbls. Stanolind Oil & Gas Co. No. 6 R. F. Russell, 3,710-80 feet, 60 bbls. Sun Oil Co. No. 11-B H. Schuler, 3,610-50 feet, 115 bbls. Texas Co. No. 21 Overton Bank, 3,732-37 feet, 60 bbls. Zephyr Oil Co. No. 3-B R. J. Glover, 3,540-3,656 feet, 5 bbls.

Upshur County—Longview Area

Atlantic Refining Co. No. 18 I. Walker, 3,630-3,72[illegible] feet, 65 bbls. Mudge Oil No. 7 J. Bland, 3,702-22 feet, 50 bbls.; No. 14-A J. D. Richardson, 3,655-71 feet, 80 bbls. Phillips & Dean No. 1 L. J. Everett, 3,626-42 feet, 37 bbls. Rancho Oil No. 20 J. K. Edward, 3,639-57 feet, 40 bbls. Sabinas Oil Corp. No. 16-C T. M. Collins, 3,652-58 feet, 60 bbls. Shell Petroleum Corp. No. 8 W. Landers, 3,690-3,751 feet, 60 bbls. Sun Oil Co. No. 19 J. T. Lodden, 3,692-97 feet, 120 bbls. Texfield Oil No. 5 E. O'Bryne, 3,760-61 feet, 15 bbls.

Smith County

Magnolia Petroleum Co. No. 21 R. Loosier, 3,701-04 feet, 92 bbls. E. F. Perry Rec. No. 3 S. S. Cook, 3,731-44 feet, 1 bbl.

EAST CENTRAL TEXAS COMPLETIONS

(24-hour gauges)

Falls County

Bell No. 2 Trice, dry and abandoned at total depth of 1,303 feet.

Henderson County

In the Cayuga field, F. M. Allison No. 6 B. Watham, 4,089-4,105 feet, 184 bbls.

Houston County

At Navarro Crossing, Humble Oil & Refining Co. No. 1 Dailey, 296 bbls. In the Kittrell field, Sun Oil Co. No. 1 Reynolds, dry and abandoned at total depth of 2,695 feet.

Titus County

In the Talco field, Humble Oil & Refining Co. No. 57 A. P. King, 4,170-4,338 feet, 173 bbls.

NORTH TEXAS COMPLETIONS

Archer County

Chapman & McFarlin No. 3 W. P. Ferguson, 3,771-3,881 feet, 1,010 bbls. A. A. Horwitz No. 8 Benson Estate, 830-928 feet, 100 bbls. Rutland & Abbott No. 1 C. Cowan, 1,150 feet, dry.

Baylor County

Dixon S. Kelly No. 1 W. T. Waggoner, 1,900 feet, dry.

Clay County

Bridwell Oil Co. No. 8 T. C. Thornberry, 1,086-95 feet, 250 bbls.; No. 9 T. C. Thornberry, 1,086-1,106 feet, 180 bbls. Roy Carter Drilling Co. No. 1 S. W. Rice, 1,407 feet, dry. William H. McDonald No. 1 Lomax, 257 feet, dry; No. 2 Lomax, 300 feet, dry. W. H. Metzner No. 9 J. J. Taylor, 1,101-1,121 feet, 155 bbls. W. H. Metzner & Burns No. 2 L. Thornberry A, 1,078-1,106 feet, 144 bbls.; No. 5 L. Thornberry A, 204-17 feet, 5 bbls.

Cooke County

H. L. Nutting and others No. 1 H. P. Ware, 2,230 feet, dry. Kingery Bros. No. 2 Robert Yosten, 863 feet, dry.

Jack County

C. D. Thornton No. 5 F. C. Bloodworth, 356 feet, dry.

R. D. Compton Oil Co. No. 17 C. C. Henderson, 317-330 feet, 30 bbls. Deka Oil Co. No. 3 C. C. Henderson, 368 feet, dry. B. C. Gilmore No. 1 F. C. Bloodworth, 538 feet, dry. Nelson Oil Syndicate No. 4 J. P. Eatherly, 2,772-2,800 feet, 395 bbls.

Knox County

King & McCurdy No. 1 Nellie Rogers, 1,708 feet, dry.

Wichita County

Carl B. Bailey, 1,737-61 feet, 15 bbls. C. J. Bohner Oil Corp. No. 2-B First National Co., 3,618-3,855 feet, 760 bbls. Deep Rock Oil Corp. No. 1 E. H. Hamilton, 3,675-3,798 feet, 1,870 bbls. Bolin & Whittington No. 3-A J. and J. Waggoner, 906-21 feet, 40 bbls. Burk Royalty Co. No. 1 Sue Mitchell, 3,872-3,916 feet, 592 bbls. L. T. Burns No. 27 First National Co., 3,700-3,878 feet, 488 bbls. Chapman & McFarlin No. 2 Sparks Mayfield, 3,884-3,922 feet, 1,000 bbls. Continental Oil Co. No. 1 J. and J. Waggoner, 3,820-4,239 feet, 96 bbls. Dinsmore & Stipe No. 12 S. B. Burnett and others, 702 feet, dry. E. C. Oil Co. No. 5 Lebus, 3,730-3,836 feet, 624 bbls. E. C. Oil Co. No. 1 Mrs. Anna Mangold, 3,791-3,798 feet, 1,752 bbls. M. T. Flanagan No. 1 Texas L. & M. Co., 4,083 feet, dry. Featherston & Donahoe No. 1 J. A. Nelson, 3,786-3,840 feet, 1,200 bbls. Golding & Cochran No. 23 J. and J. Waggoner C, 3,800-50 feet, 664 bbls. Humble Oil & Refining Co. No. 15 First National Co., 3,612-3,853 feet, 529 bbls.

Kimmell Lee and others No. 1 W. J. Logan, 3,690-3,870 feet, 920 bbls. King Oil Co. and others No. 7 Mrs. Anna Mangold, 3,712-3,835 feet, 768 bbls. A. Kriss and others No. 1 T. P. Dorris, 525 feet, dry. A. Kriss No. 1 M. J. McDonald, 536-37 feet, 10 bbls.; No. 2 M. J. McDonald, 537-47 feet, 3 bbls. No. 3 M. J. McDonald, 523-33 feet, 15 bbls. Magnolia Petroleum Co. No. 2 Sue Mitchell, 3,887-3,927 feet, 632 bbls. W. H. Peckham No. 1 J. and J. Waggoner, 3,751-3,842 feet, 680 bbls. Pois & Schulz No. 9 Ed Foster J, 1,988 feet, dry. D. W. Power and others No. 1 L. C. Denny, 3,810-3,871 feet, 896 bbls. Rathke Oil Co. No. 15 S. B. Burnett and others, 2,016 feet, dry. H. W. Roberts No. 1 R. D. Kempner, 3,840-3,874 feet, 808 bbls. Staley Oil Co. No. 11 First National Co., 3,858-99 feet, 456 bbls. Stidham & Thrasher No. 1 J. F. Miller, 3,659-3,854 feet, 880 bbls. Sunray Oil Co. No. 2 Mrs. Anna Mangold, 3,715-3,811 feet, 2,280 bbls. Texas Co. No. 25 First National Co., 3,605-3,853 feet, 952 bbls.; No. 26 First National Co., 3,600-3,852 feet, 680 bbls. H. H. Wegener No. 2 First National Co., 3,761-3,865 feet, 816 bbls.

Wilbarger County

J. E. Kadane No. 1 W. T. Waggoner, 3,905 feet, dry. E. C. Lawson No. 1 Mrs. L. Roitsch, 2,616 feet, dry. Phillips Petroleum Co. No. 4 W. T. Waggoner V, 3,036-45 feet, 1,248 bbls. W. W. Wolsey No. 1 T. J. Milner, 1,482 feet, dry.

Young County

F. W. Bennett No. 1 Mrs. W. Robertson, 3,579-3,888 feet, 75 bbls. Echols & Echols No. 1 I. H. Gathright, 735 feet, dry. Chambers & Humphrey No. 3 S. M. J. Benson, 908-25 feet, 20 bbls. Cundan and others No. 23 Benson A, 890-99 feet, 130 bbls.; No. 24 Benson A, 883-85 feet, 150 bbls. Fred Foote, Jr., No. 1 T. L. Oliver, 604 feet, dry. Piper & Wilson No. 5 S. L. Scott, 633-70 feet, 30 bbls.

Rocky Mountain Area

By
T. R. INGRAM

23 Field Operations Started in Southeastern New Mexico

DENVER, Colo., May 2.—Several Colorado wildcats which were shut down for the winter, are resuming. Leases in northern Cheyenne County formerly held by Brittel Oil, Inc., are reported being taken up by majors upon reversion to the owners. Isadore Spangler No. 1 St. Marys, Florence field, increased to 18 bbls. per day upon being deepened. One new operation was started in that area. Continental Oil Co. let the contract for its Cottonwood test.

Wyoming had no new operations or completions. One shallow test in Hot Springs County was abandoned.

Glacier Production Co. has resumed the producing of its wells in Cut Bank, Montana, to build up reserve for new refinery getting under way in Spokane, Wash. One new operation was reported in Cut Bank and three in Kevin-Sunburst. Big West Oil Co. No. 6 Gunderson, in Kevin-Sunburst, was completed for 20 bbls. per day.

NEW MEXICO

An increase in activity was recorded in southeastern New Mexico the past week when 23 new tests were announced. The Vacuum area in Lea County was the pace-setter for the week with nine new locations. One of the more interesting of the new tests was Phillips Petroleum Co. No. 6 Santa Fe, section 21-17-35, about 2 miles northeast of Vacuum production. Another new Lea County wildcat of interest was Rowan & Nichols No. 1 State, section 22-10-37, northeast of Tatum in northeastern part of the county.

Completions of the week in Lea County included two wildcat failures in the 15-mile gap between the Monument and Vacuum pools.

One was Continental Oil Co. No. 1-G-12 State, C SE SW section 12-18-35, dry and abandoned at 5,175 feet, total depth.

The other was Shell Petroleum Corp. No. 1-A State. NE cor. section 33-18-36, some 5 miles northwest of the Monument field and 5 miles southeast of the Continental failure. It was dry and abandoned at 5,289 feet, total depth.

Amerada Petroleum Corp. No. 1 State VB, C NE SW section 36-17-34, Vacuum area, Lea County, flowed 730 bbls. of oil through tubing in 11 hours and was completed at 3,755 feet, total depth. Pay was topped at 3,525 feet.

Texas Pacific Coal & Oil Co. No. 10-A State, C W half SW SW section 8-22-36, South Eunice pool, found pay at 3,755 feet, total depth 3,840 feet, and flowed 45 bbls. of oil an hour, initially.

Bradley Oil Co. No. 1 Downes, C NE NW section 5-22-37, Hardy sector, flowed 300 bbls. of oil through choke in 15 hours from pay topped at 3,525 feet, total depth 3,755 feet.

Gulf Oil Corp. No. 4 McCormack, C SW SE section 32-21-37, Hardy area, had pay at 3,725 feet, was bottomed at 3,770 feet, and flowed 114 bbls. of oil daily through tubing.

Culbertson & Irwin No. 3 Alston, NW NE NE section 27-25-37, Langlie district, flowed 432 bbls. of oil daily through tubing. Pay was found at 3,324 feet, total depth 3,345 feet.

Danglade & Clower No. 1 Currie, NE NE SW section 6-21-37, topped pay at 3,634 feet, total depth 3,773 feet, and flowed 147 bbls. of oil daily. Gas volume was 1,800,000 feet.

Stanolind Oil & Gas Co. No. 3-C Hill, C W half NW NW section 5-21-37, flowed 120 bbls. of oil in 12 hours through tubing choke. Pay was found at 3,705 feet, total depth 3,755 feet.

Two Eddy County wells were completed. F. W. & V. Oil Co. No. 1-B Gissler, SW NW SW section 14-17-30, Jackson field, had initial production of 100 bbls. of oil daily from pay topped at 3,367 feet, total depth 3,492 feet.

Same operator's No. 2-B Gissler, C NW NW section 24-17-30, had pay at 3,440 feet, was bottomed at 3,505 feet, and flowed 60 bbls. of oil daily.

Lea County

Addison Oil Co. No. 2 Knight, C SW NW sec. 27-24-37. Cellar and pits.

Amerada Pet. Corp. No. 6 Byrd, SE sec. 12-20-36. Loc.

Amerada Pet. Corp. No. 3 Laughlin, C NW NE sec. 9-20-37. T.D. 2,855 ft.; set 8-in. 2,573 ft.

Amerada Pet. Corp. No. 2 State VA, C NW SW sec. 23-17-34. T.D. 258 ft.; W.O.C.

Amerada Pet. Corp. No. 1 Frances Stuart, NE NW NE sec. 22-25-37. T.D. 3,159 ft.

Amerada Pet. Corp. No. 2 James Stuart, C W½ SW NW sec. 14-25-37. Drk.

Anderson-Prichard Oil Corp. No. 2 Langlie, SE sec. 8-25-37. Drlg. 3,420 ft.

Anderson-Prichard Oil Corp. No. 4 Langlie, NE SW NE sec. 8-25-37. T.D. 3,286 ft.; W.O.C.

Anderson-Prichard Oil Corp. No. 1 Wells, C SE SE sec. 5-27-37. Drlg. 3,610 ft.

Anderson-Prichard Oil Corp. No. 2 Wells, C SW SE sec. 5-27-37. Loc.

Atlantic Ref. Co. No. 1 State, C SE SW sec. 32-24-37. Cellar, pits.

Cities Service Oil Co. No. 3-A Closson-A, C NE SE sec. 18-22-36. T.D. 3,542 ft.; W.O.C.; gas est. 200,000,000 ft.

Cities Service Oil Co. No. 1-H State, C NE NE sec. 17-22-36. T.D. 3,884 ft.; prep. to deepen.

Continental Oil Co. No. 2-F-1 State, C SW NE sec. 1-21-36. Drk.

Continental Oil Co. No. 1-J-2 State, C NW NE sec. 2-22-36. Loc.

Continental Oil Co. No. 1-B-15 Britt, C W½ NW NW sec. 15-20-37. Drlg. 3,133 ft.

Continental Oil Co. No. 2-A-20 Jack, C SE SE sec. 20-24-37. Drlg. 2,916 ft.

Continental Oil Co. No. 3 Jack, C SE NE sec. 20-24-37. Cellar, pits.

Continental Oil Co. No. 1-A-31 Marsh, SE sec. 31-20-39. Wildcat; T.D. 4,346 ft.; C.O.; O.I.H.

Continental Oil Co. No. 4 Reed B-23, C E½ NW NE sec. 23-20-36. Drlg. 3,715 ft.

Continental Oil Co. No. 5 Reed, C W½ NE SE sec. 23-20-36. Cellar, pits.

Continental Oil Co. No. 2 Sanderson, NE NE SW sec. 14-20-36. Loc.

Continental Oil Co. No. 9 Sanderson, NE SE NW sec. 14-20-36. Loc

Continental Oil Co. No. 4-E-17 State, C SW NW sec. 17-22-36. T.D. 3,080 ft.

Continental Oil Co. No. 1-F-1 State, C SW SW sec. 1-21-36. T.D. 3,935 ft.; P.B. 3,838 ft.; 396,000 ft. gas; tstg.

Continental Oil Co. No. 1-I-16 State, C NW NW sec. 16-18-35. Coring 4,168 ft.

Cranfill & Germany No. 1 Weir, C NE NE sec. 15-20-37. T.D. 4,210 ft.; S.D.O.

Culbertson & Irwin No. 4 Alston, SW SE NW sec. 26-25-37. R.U.R.

Culbertson & Irwin No. 1 Dabbs, NE NE NW sec. 35-25-37. R.U.M.

Culbertson & Irwin No. 6-A Humphrey, NE SW SE sec. 3-25-37. Drlg. 2,765 ft.

Culbertson & Irwin No. 2 Liberty Royal, C N½ SW NW sec. 3-25-37. T.D. 1.185 ft.; fsg.

Danglade & Clower No. 1 Glier, C SW NE sec. 32-22-37. T.D. 3,680 ft.; C.O.; flwd. 105 B.O. in 48 hrs. through csg.; C.O.

L. E. Elliott No. 2 Elliott, NE NW SE sec. 26-20-36. T.D. 3,550 ft.; fsg.

A. R. Eppenauer No. 1 Stuart, NW NE NE sec. 22-25-37. T.D. 3,373 ft.; flwd. 15 B.O.P.H. at 3,321 ft.

J. E. Farrell No. 2-C Walden, C SE SW sec. 15-22-37. Drlg. 3,700 ft.

Great Western Prod. Co. No. 1-C State, C NE SW sec. 7-19-37. Drk.

Gulf Oil Corp. No. 1 Alley, C NE SE sec. 10-23-37. T.D. 3,713 ft.; P.B. 3,695 ft.; tstg.

Gulf Oil Corp. No. 8-F Bell, C NW NW sec. 36-20-36. Drk.

Gulf Oil Corp. No. 1 Boyd, sec. 23-22-37. T.D. 3,681 ft.; tstg.

Gulf Oil Corp. No. 2-D Kutter, C SE SW sec. 8-19-37. T.D. 4,155 ft.; P.B. 4,100 ft.; S.D.O.

Gulf Oil Corp. No. 4-C Kutter, C SW NW sec. 18-19-37. Drlg. 3,695 ft.

Gulf Oil Corp. No. 2 Ramsey, C SW SW sec. 27-21-36. shot; C.O. at 3,731 ft.

Humble O. & R. Co. No. 5 Fopeano, C E½ SW SE sec. 26-20-36. T.D. 1,315 ft.; W.O.C.

Humble O. & R. Co. No. 3-H State, C NW NW sec. 34-22-37. Drk.

Humble O. & R. Co. No. 3 Williams, C SW NW sec. 34-24-37. T.D. 3,532 ft.

Jal Nat. Gas Corp. No. 2 Justis, NE sec. 20-25-37. T.D. 3,029 f..; tstg.

Carl B. King No. 1-A Stuart, NW NE NW sec. 14-25-37. T.D. 3,395 ft.; tstg.

Magnolia Pet. Co. No. 1 Brunson-Argo, C NW NE sec. 9-22-37. Drlg. 3,405 ft.

Magnolia Pet. Co. No. 1 State G, NW NW NE sec. 34-17-34. T.D. 4,905 ft.; P.B. 4,794 ft.

Magnolia Pet. Co. No. 2-K State, C NE SE sec. 31-17-35. Drlg. 3,931 ft.

Magnolia Pet. Co. No. 2 State-Bridges, sec. 14-17-34. T.D. 4,593 ft.; flwd. 51 B.O. in 1 hr., naturally.

Magnolia Pet. Co. No. 3 State-Bridges, C NE NW sec. 26-17-34. Drlg. 2,220 ft.

Magnolia Pet. Co. No. 4 State-Bridges, C NW NE sec. 26-17-34. T.D. 4,758 ft.; shot; F. 75 B.O. in 15½ hrs.; tstg.

Magnolia Pet. Co. No. 5 State-Bridges, C NE NW sec. 26-17-34. T.D. 4,750 ft.; perf. and acid.; swb. 5 B.O. P.D.; to reshoot.

Magnolia Pet. Co. No. 6 State-Bridges, C SW NW sec. 23-17-34. Drlg. 3,505 ft.

Magnolia Pet. Corp. No. 7 State-Bridges, C SW NE sec. 23-17-34. Cellar, pits.

Magnolia Pet. Corp. No. 8 State-Bridges, C NW SE sec. 23-14-34. Drk.

Maljamar O. & G. Co. No. 9 Baish, C NW NW sec. 21-17-32. Drlg. 980 ft.

Maljamar O. & G. Co. No. 4 Mitchell, C NE NE sec. 20-17-32. Loc.

Maljamar O. & G. Co. No. 5 Mitchell, C NW NW sec. 19-17-32. Loc.

Jas. A. Mascho No. 2 Cloyd, C SW SW sec. 20-22-33. Loc.

C. T. McLaughlin No. 1 Polhamus, NE sec. 9-24-37. T.D. 3,672 ft.; S.D.O.

National Drlg. & Prod. Co. No. 1 Flint, C NE NE sec. 29-20-34. Wildcat; drlg. 3,710 ft.

Ohio Oil Co. No. 1 Kutter D, C SW SW sec. 18-19-37. Drlg. 3,625 ft.

Ohio Oil Co. No. 1 State-Fleming, NE cor. sec. 2-26-37. M.I.M.

Ohio Oil Co. No. 7 State-McDonald, C SW SE sec. 16-22-36. T.D. 3,871 ft.; C.O.

Ohio Oil Co. No. 10 State-McDonald, C NE SW sec. 16-22-36. T.D. 3,660 ft.; cmt.

Ohio Oil Co. No. 2 State-Warn, C NE SW sec. 31-17-35. Drlg. 1,825 ft.

Paton Bros. No. 2 Wilkinson, C SE SE sec. 8-18-31. Loc.

Lem Peters No. 1 L. J. May, C NW SE sec. 27-22-37. Drlg. 1,330 ft.

Lem Peters No. 1 T. O. May, C NW NE sec. 34-22s-37. T.D. 505 ft.; cmtg.

Phillips Pet. Co. No. 2 Santa Fe, C SW SE sec. 30-17-35. T.D. 4,685 ft.; acd.; swb. 450 B.O. in 24 hrs.; S.I.

Phillips Pet. Co. No. 3 Santa Fe, C SW NW sec. 5-18-35. Rig.

Phillips Pet. Corp. No. 4 Santa Fe, C SW SE sec. 31-17-35. Cellar.

Phillips Pet. Corp. No. 5 Santa Fe, C NW SW sec. 31-17-35 Cellar.

Phillips Pet. Corp. No. 6 Santa Fe, C SW SE sec. 21-17-35. Loc.

Plains Prod. Co. No. 1 Humphreys, NE sec. 3-25-37. Loc.

Repollo Oil Co. No. 2 Hair, NW SW NW sec. 9-24-37. Cellar and pits.

Repollo Oil Co. No. 1 State, SE cor. sec. 6-17-34. Drlg. 4,080 ft.

Repollo Oil Co. No. 2-B State, NE SE NW sec. 7-22-36 Drlg. 3,035 ft.

Repollo Oil Co. No. 4-B Whitten, NE NE SE sec. 4-24-36. Drlg. 1,215 ft.

Rowan & Nichols No. 1 State, C NE NW sec. 22-10-37. Loc.

J. M. Rush No. 2 Wantz, C NW SW sec. 21-21-37. Cellar, pits.

Harry J. Schafer No. 1-A State, C E½ NW NE sec. 26-20-36. Drlg. 3,641 ft.

Shasta Oil Co. No. 2 Woolworth, NE NW NW sec. 28-24-37. T.D. 3,020 ft.

Shell Pet. Corp. No. 2-A State, C SW NE sec. 31-17-35. Drlg. 4,485 ft.

Shell Pet. Corp. No. 4-E State, C SW NW sec. 12-20-36. Drlg. 3,800 ft.

Skelly Oil Co. No. 5 J. B. Baker, C SE NW sec. 27-22-37. T.D. 3,620 ft.; tstg.

Skelly Oil Co. No. 3 G. W. Sims, C NW NE sec. 9-23-37. T.D. 3,642 ft.; C.O.

Skelly Oil Co. No. 1-C R. R. Sims, sec. 3-23-37. Drlg. 3,688 ft.

Skelly Oil Co. No. 1-E W. P. Sims, C NW NE sec. 10-23-37. T.D. 3,625 ft.; flwd. 452 bbls. in 24 hrs.

Skelly Oil Co. No. 1-L State, C SW NW sec. 2-25-37. R.U.M.

Southern Pet. Explo. Co. No. 2 Downes, C SW SW sec. 32-21-27. T.D. 3,248 ft.; fsg.

Stanolind O. & G. Co. No. 2-A Hill, C NE SE sec. 6-21-37. Drlg. 2,832 ft.

Stanolind O. & G. Co. No. 5-B Myers, C NE SW sec. 9-24-37. T.D. 311 ft.

W. H. Street No. 4 Woods, C NE NE sec. 22-22-37. Drlg. 2,885 ft.; S.S.O.&G.

Texas Co. No. 3 Black, C NW NE sec. 21-24-37. T.D. 800 ft.; rng. csg.

Texas Co. No. 1 Corbin, C NW SW sec. 19-18-33. T.D. 5,118 ft.; P.B. 5,112 ft.; W.O. new tools.

Texas Co. No. 4 Fristoe, NW NE SE sec. 3-25-37. Drlg. 1,590 ft.

Texas Co. No. 1-N State, C SW SW sec. 30-17-35. T.D. 4,850 ft.; swb. 8 B.O. and 64 B.W. in 6¾ hrs.; to plug back.

Texas Co. No. 2-O State, C SE NE sec. 36-17-34. Drlg. 3,470 ft.; S.O.&G.

Texas Co. No. 3-O State, C SW NE sec. 36-17-34. Loc.

Texas Co. No. 1-P State, C NW SE sec. 7-18-35. Drlg. 3,740 ft.

Texas Co. No. 1-Q State, C SE SE sec. 25-17-34. Loc.

Texas Co. No. 2-Q State, C SW SE sec. 25-17-34. Loc.

Texas Pacific C. & O. Co. No. 11-A State, Acct. 2, C SE NE sec. 7-22-36. T.D. 3,590 ft.; lost cir.

Texas Pacific C. & O. Co. No. 12-A State, C NE SE sec. 7-22-36. R.U.R.

Twin Drlg. Co. No. 1 Corrigan, C NW NE sec. 4-22-37. Loc.

Twin Drlg. Co. No. 1 State, C SE NW sec. 32-21-37. Loc.

Weler Drlg. Co. et al No. 1 Woolworth, NE NE SW sec. 28-24-37. Drk.

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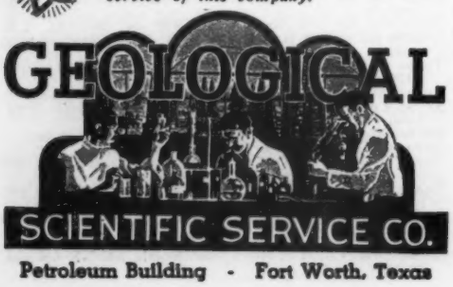

Petroleum Building - Fort Worth, Texas

Sam Weiner No. 1 Smith, NE cor. sec. 4-25-37. T.D. 2,885 ft.; fsg.; S.O.&G.
Weiner No. 1 Parcell, C SW NE sec. 8-23-28. Drlg. 982 ft.
Western Gas Co. No. 1 Curry, C SE SE sec. 1-24-36. T.D. 3,385 ft.; S.G.
Western Gas Co. No. 1 Matkins, C SE SE sec. 15-23-36. T.D. 3,665 ft.; shot; C.O.

Eddy County

F. E. Baker No. 1 Eddy, NE sec. 12-22-37. T.D. 2,024 ft.; S.D.O.
Barnett Oil Dev. Co. No. 1 King Permit, C NW SE sec. 23-26-30. T.D. 980 ft.; S.D.
Carper Drlg. Co. No. 3 Gissler, C E½ E½ NW sec. 23-17-30. Drlg. 3,286 ft.; swb. 15 B.O.P.D. while drlg.
Danciger O. & R. Co. No. 4-A Turner, C SW SW sec. 18-17-31. Drlg. 3,120 ft.
Danciger O. & R. Co. No. 1-B Turner, CEL NE SE sec. 17-17-31. Loc.
D. & B. Oil Co. No. 3 Jenkins, NE NE NW sec. 20-17-30. Drlg. 1,725 ft.
Emperor Oil Co. No. 4 Puckett, C NE NE sec. 24-17-31. T.D. 3,982 ft.; acidized; tstg.
Emperor Oil Co. No. 5 Puckett, C SW NE sec. 24-17-31. T.D. 3,915 ft.; swb. 100 B.O. in 16 hrs.; tstg.
Etz Bros. No. 5 State, SE NE SE sec. 16-17-30. Loc.
Finley & Cherry No. 1 Buchley, C NW NW sec. 28-16-31. Wildcat; T.D. 3,750 ft.; S.D.
Flint Prod. Co. No. 1-B State, SE sec. 20-17-30. Drlg. 3,830 ft.
C. J. Frederick No. 1 Reed, C NE SW sec. 28-24-28. Drlg. 2,467 ft.
F. W. & Y. Oil Co. No. 8-A Gissler, NE NW NE sec. 23-17-30. T.D. 3,237 ft.; drlg. by lost tools.
F. W. & Y. Oil Co. No. 9-A Gissler, C SE NE sec. 14-17-30. T.D. 3,500 ft.; swb. 30 B.O.P.D.; to acidize.
F. W. & Y. Oil Co. No. 3 Jackson, C NW SE sec. 13-17-30. T.D. 2,953 ft.; fsg.
Grayburg Oil Co. No. 4 Keely, SE SW NE sec. 24-17-9. T.D. 3,588 ft.; to test.
H. A. Hartwell No. 1 Vandagrift, NE NE SE sec. 8-18-27. T.D. 2,000 ft.; S.D.O.
R. L. Holcomb No. 1 State, NW sec. 22-17-28. T.D. 1,980 ft.; S.D.O.
C. F. Ingram No. 1 Page, NE NE SW sec. 15-21-28. T.D. 1,495 ft.; S.D. for new rig.
B. M. Koehane et al No. 1 Shannon, SE cor. sec. 27-16-31. Drlg. L. 3,985 ft.
Paul Moran No. 1 Crawford & Smith, NW NW SW sec. 24-24-36 Drlg. 1,500 ft.
Murchison & Closuit No. 1 Foster, SE NE SE sec. 17-17-31. Drlg. 3,275 ft.
Murchison & Closuit No. 2-A State, NW SE SW sec. 16-17-31. T.D. 3,585 ft.; acidized; S.O.&G.
Paton Bros. No. 2 Ginsberg, C SE SE sec. 8-18-31. Drlg. 610 ft.
Pecos Valley Gas Co. No. 1 Sappenfield, C SE SE sec. 4-16-28. T.D. 2,601 ft.; W.I.H.; S.D.O.
Premier Pet. Co. No. 1 Beeson, NE SE SE sec. 28-17-30. T.D. 3,233 ft.; S.D.O.
Red Gulch Oil Co. No. 2 Keyes, C SW SE sec. 4-17-28. Drlg. 1,231 ft.
Repollo Oil Co. No. 3-A Keel, SW SE SW sec. 7-17-31. T.D. 585 ft.; W.O.C.
Repollo Oil Co. No. 2-C McIntyre, NE cor. sec. 20-17-30. Drlg. 3,065 ft.; S.O.&G.
Repollo Oil Co. No. 2-A Parke, NW NW NE sec. 22-17-30. T.D. 3,425 ft.; 2,000 ft. O.I.H. in 6 hrs.
Repollo Oil Co. No. 3-A Parke, NW cor. sec. 22-17-30. T.D. 524 ft.
Paul Sarget No. 1 State, NE sec. 16-17-31. T.D. 3,749 ft.; P.B. 3,745 ft.; tstg.
R. A. Shugart No. 1 Coulthard, C NW SW sec. 35-18-31 C.O. 3,500 ft.; F. 85 B.O.P.D.; tstg.
Neil H. Wills et al No. 3-A State, NE SE SW sec. 20-20-30. T.D. 550 ft.; W.O.C.
W. K. Royalty No. 2 State, C NW NE sec. 16-17-31. Drlg. 3,540 ft.; swb. est. 50 B.O.P.D.
W. O. Snyder No. 1 Pecos Irrigation, C NE SE sec. 15-25-28. T.D. 3,330 ft.; S.D.O.
Western Drlg. Co. No. 1-A Western, SE SW NW sec. 23-17-29. Drlg. 2,360 ft.

Chaves County

E. J. Fisher No. 1 Etz Permit, NE sec. 23-7s-26. T.D. 1,610 ft.; plg. csg.
Grastorf & Caudill No. 1 Smith, C NE NE sec. 1-4s-29. Wildcat; new hole; drlg. 475 ft.
Interstate Minerals, Inc., No. 1 Dunigan, NW cor. sec. 15-15-30. C.&P.
J. & L. Drlg. co. No. 2 Hurd, SW sec. 11-11-28. T.D. 1,000 ft.; fsg.

De Baca County

Land Owners Oil Co. No. 1 McAdoo, SW cor. sec. 16-1s-7e. O.W.; prep. to deepen from 5,850 ft.; S.D.
James D. Ward No. 1 Summers, NW NE SW sec. 17-4n-20. T.D. 260 ft.; S.D.
N. F. Woods No. 1 Jones, C NE SW sec. 17-4n-20. T.D. 25 ft.; S.D.

Dona Ana County

Jules C. Bertrand No. 1 Casad Permit, sec. 24-26-5e. T.D. 47 ft.; S.D.O.

McKinley County

S. Dysart No. 1 Govt., NE sec. 14-14-10w. T.D. 1,390 ft.; fsg.

Otero County

Fred Turner, Jr., No. 1 Ella Everett, C SE SE sec. 34-22-13. Drlg. 3,030 ft.
Fred Turner, Jr., No. 1 H. V. Everett, SE SE sec. 28-22-13. Drlg. 1,700 ft.

Roosevelt County

C. S. Peterson and Conquistadores Oil Co. No. 1 Good, NW SE SE sec. 28-5s-30. T.D. 720 ft.

NORTHWEST NEW MEXICO

Bernalillo County

Norins Realty Co., Inc., No. 2 North Albuquerque, NE SE NW sec. 19-11n-4e. T.D. 3,750 ft.; M.I. 6⅝-in. and 3-in. D.P. to resume.

San Juan County

Continental Oil Co. No. 74 Rattlesnake, CEL SE NE sec. 2-29n-19w. T.D. 790 ft.; P.B. to 785 ft.; tstg.
Frank Lischke No. 1 Abreo, SW SW sec. 27-30n-11w. Fsg. tools at 520 ft.
Anna Oil Corp. No. 6 Govt., SW NE NE sec. 33-30n-11w. S.D. 1,870 ft.; (C.D.) for csg.

Socorro County

Central New Mexico Oil Co. No. 1 Belen Ld. Grant, NW sec. 16-3n-1e. Drlg. below 2,850 ft.

Torrance County

Chief O. & G. Co. No. 1 Pace, SE sec. 12-6n-7e. T.D. 2,020 ft.; fsg.

Valencia County

Old Spanish Grants, Inc., No. 1 San Clemente, C SE SW sec. 23-7n-1e. Contr. to Wm. Hix to drill for acreage spread; M.I. rotary.
C. A. Grober et al No. 1 Fuqua, NE NE sec. 19-5n-3e. T.D. 900 ft.; bldg. steel drk. for rotary.

COLORADO

Colorado is pulling out of its winter lethargy and several wells which have been shut down for some time are resuming. This is particularly true of tests on the western slope. The Continental Oil Co. is clearing road and getting ready to resume on its deep test on Divide Creek in Mesa County, in which the Amerada Petroleum Corp. and the California Co. have joint interests. The Buford Oil Co. sent men in the past week to look over the situation at its test in Rio Blanco County. They were held up 2 miles from the site, but one man went in on snow shoes. The snow was about 3 feet deep, but melting rapidly and it is expected that drilling will be resumed in a week or two. The Roaring Fork test near Glenwood Springs also is expected to resume and the Craig test on Trull Creek, in Routt County, already has resumed.

Archuleta County

Pagosa Oil & Dev. Co. No. 1 Macht, S sec. 32-36n-1w. Set 10-in. at 675 ft; drlg. ahead.

Cheyenne County

Gulf Oil Corp. No. 1 Union Pacific-Larsen, C SE NW sec. 13-13s-49w. Drlg. 5,550 ft. in sh. and L shells.

Elbert County

Arthur Rich, of Denver, is reported to have taken leases on around 23,000 acres of state land in southern Elbert County in Townships 11, 12 and 13s, and 57, 58 and 59w.

El Paso County

The Continental Oil Co. has placed on record leases on 1,560 acres of state land in El Paso County, including all of section 3, E half and NW of section 4, and NE of section 9-18s-67w, and the lower tier of 40s in sections 33 and 34-17s-67w. This is in the vicinity of the old Red Creek well in section 19-17s-67w, which drilled to 2,664 feet several years ago. It started 135 feet below the top of the red beds.

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Fremont County

Isadore Spangler No. 1 St. Marys, SE cor. section 2-19s-70w, reported a completion last week in the old Florence field at 1,800 feet for 10 bbls. per day, was deepened to 1,900 feet and recompleted for 18 bbls. per day. One new location was reported in Stanley Thomas No. 1 Rickwalt.

Stanley Thomas No. 1 Rickwalt, SE SE sec. 2-19s-70w. Loc. (first report).

LaPlata County

N. Spatler No. 1 Bryce, SE SW SW sec. 31-33n-9w. T.D. 1,510 ft.; drlg. by.

Mesa County

Continental Oil Co. et al No. 1 Miller, SW SW NW sec. 36-8s-91w. T.D. 603 ft.; clearing road to res.

Prowers County

Contract for the Continental Oil Co.'s test on the Cottonwood Structure was let to the Fain Drilling Co. of Oklahoma City, and contractor is moving in following release of final location.

Continental Oil Co. No. 1 Ruby, C NE NW sec. 31-21s-44w. Cellar dug.

Routt County

The test on the Trull Creek structure west of Steamboat Springs, which spudded last fall and shut down for the winter, has resumed. It is being drilled by L. C. Craig and E. L. Moore on a structure formed in beds of lower Mancos age extending for 7 miles through townships 6 and 7n-85w.

Craig & Moore No. 1 Erwin, C SW NE sec. 33-7n-85w. Drlg. 650 ft.

WYOMING

Big Horn County

Prescott & Mileski No. 1 Govt., NE NW SW sec. 15-1n-93w. Drlg. 536 ft.

Clifford S. Johnson No. 1 Johnson, CEL NW NW sec. 24-51n-93w. Rig; (cor.); W.O. engine.

Joan Oil Co. No. 1 Howell, NE NW NE sec. 32-55n-97w. S.D. 3,385 ft.

Carbon County

Producers Oil Co. No. 1 Lake Valley, 200 ft. S of CNL sec. 14-20n-88w. Res. drlg. 1,755 ft.; 12½-in. at 1,588 ft.

Wyco Oil Co., Inc., No. 1 Union Pacific, NE SE NE sec. 2-23n-79w. Spdg.

Ohio Oil Co. No. 3 Hazlett Est., NE SW SE sec. 34-23n-79w. Drlg. 811 ft.; Wall Cr. sd. at 720-763 ft.; running low.

Ohio Oil Co.-California Co. No. 3 State-Griffin, C SW NW sec. 36-21n-79w. Drlg. 1,214 ft.

Converse County

New Era Fuel Co. No. 1 Boot Cattle, CSL SE SE sec. 1-31n-70w. Spdg.

E. B. Jones No. 1 O'Meara-Govt., NW SE NE sec. 17-32n-69w. Spdg.

Wyshawn Oil Co. No. 1 Lindley, NW SE SE sec. 34-32n-69w. T.D. 600 ft.; U.R. 10-in.

Fremont County

A swift airplane flight from Denver and two emergency landings may possibly save the life of Elmer Bounden, a driller on the Sinclair-Wyoming Oil Co. No. 2-B, Muskrat field in Fremont County. Bounden was working in the cellar when an explosion of gas occurred, throwing him out of the cellar and critically injuring him. Manning & Martin, Inc., of Denver, who have the drilling contract on the well, were notified by telephone and the firm immediately dispatched its plane to the well for emergency aid. R. E. Barker, pilot, made the 300-mile trip to Casper in an hour and 10 minutes, where he picked up Dr. Allen McLellan and resumed the trip. The 75-mile trip to the well, where an emergency landing was made, took 27 minutes. It was necessary to send back to Casper for medical supplies and this was accomplished in record time. The injured man was then placed in the plane and taken to a hospital in Casper. The wounded man's condition was reported serious, but without the quick first aid the physician says he would have had no chance.

Sinclair-Wyoming Oil Co. No. 2-B Muskrat, NW NW NE sec. 4-33-92w. Drlg. 4,563 ft.

Stanolind O. & G. Co. No. 1 Govt., C SE SE sec. 3-33n-96w. Drlg. 8,869 ft. in hd. tight brown sd.

Hot Springs County

The Delaware Oil Co. No. 1 Government-Skelton, C SE SE section 2-43n-96w, on the Red Rose dome, between the Waugh and Warm Springs black oil pools, was dry and abandoned at 1,103 feet, 43 feet in the Big Horn formation. It had the top of the Tensleep at 330 feet and the Amsden at 575 feet.

Natrona County

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE SW sec. 26-40n-79w. C.&P.

Western Producers, Inc., No. 1 Govt., NW SW SE sec. 5-39n-78w. Drlg. 1,156 ft.

Stanolind O. & G. Co. No. 8 T.P.-Midwest Oil, C NW SW sec. 35-40n-79w. Loc.; W.O. compl. No. 26.

Stanolind O. & G. Co. No. 26 T.P.-Wyo. Asso., C SE NW sec. 35-40n-79w. Cmtd. 9⅝-in. at 2,967 ft.; W.O.C.

General Pet. Corp. No. 1 Govt., C NW SE sec. 21-35n-77w. Drlg. 7,835 ft. in Thermopolis sh.

Niobrara County

Continental Oil Co. No. 12 Tom Bell, C SE SE sec. 33-36n-65w. T.D. 414 ft.; cmtd. 13⅜-in. at 402 ft.; W.O.C.

A. B. Cobb et al No. 3 Novick-Ong, SW SE SW sec. 6-35n-65w. Drlg. 3,726 ft.; Dakota 3,450 ft.; Lakota 3,635 ft.

MacKinnie Oil & Drlg. Co. No. 3 Thompson, NW NE NW sec. 7-35n-65w. Drlg. r.b. 4,543 ft.

Minnelusa Oil Co. No. 2 H. & M., NW NE NE sec. 8-35n-65w. S.D.O. 325 ft. after cmtg. 13⅜-in.

Continental Oil Co. No. 11 Tom Bell Cattle, SE SW SW sec. 27-36n-65w. Drlg. 4,748 ft.

Hewitt Bros. and Manning No. 1 Pecklow, SE SE SE sec. 1-35n-66w. Drlg. 3,329 ft.

Ohio Oil Co. No. 10 Putnam, NW SE NW sec. 4-35n-65w. Drlg. 4,867 ft.; top Minnekahta 4,725 ft.; top Opeche 4,767 ft.

H. D. Moore et al No. 1 Beregren, NW sec. 23-35n-63w. Drlg. in Sundance 937 ft.; top Morrison 587 ft.

Sublet County

Major Oil Dev. Co. and Yellowstone Oil Co. No. 1 Henry Budd, C SE SE sec. 6-30n-112w. Rdy. to spd.

Wyoming Pet. Corp. No. 1 Chas. Budd, C NE NE sec. 10-29n-113w. Rdy to spd.

Sweetwater County

Sinclair-Wyoming Co. No. 78, SW SW NW sec. 11-26n-90w. Drlg. r.b. 3,147 ft.

Selegna Oil Co. No. 1 Union Pacific, SW SW sec. 11-20n-104w. T.D. 4,200 ft.; fsg. D.P.

Weston County

Chas. F. Martens No. 9, NE SW NE sec. 23-46n-64w. Tstg. W.S.O. with 8¼-in.

Chas. Stough No. 11, CSL SW NW sec. 4-46n-63w. Drlg. below 100 ft.

Osage Trust Co. No. 29, NW SE SW sec. 14-46n-64w Cmtd. 8¼-in. at unreported depth.

John Brorphy No. 1 George, SW SE NW sec. 26-48n-64w. Recmtd. 6⅝-in. at 3,012 ft.

Washakie County

Wyoming O. & R. Co. No. 10-B Brome, C SE NE sec. 6-47n-90w. Drlg. 211 ft.

MONTANA

Carbon County

R. C. Tarrant No. 1, 500 ft. W of C sec. 3-6s-18e. Cmtd. 12½-in. at 652 ft.

R. C. Tarrant No. 2 Heare, NW SE NW sec. 14-6s-19e. T.D. 1,780 ft.; C.O. tubing rec.

Sha-Wa Pet Co. No. 1 Govt., SW SW NE sec. 35-9s-23e. T.D. 3,223 ft.; P.B. to 3,060 ft.; fsg.

Miracle Oil Co. No. 2 Govt., CWL NE SE sec. 3-6s-23e. Drlg. 2,371 ft.; 5⅛-in. at 2,360 ft.

Fergus County

Baughman & Singley No. 1 Skaggs, C NW SW sec. 7-15n-20e. S.D. 525 ft.

Glacier County

There was one new operation in Cut Bank in A. B. Cobb No. 3 Reagan-Jackson. There were no completions. The Texas Co. No. 1 Lindquist, C SE SE section 17-32n-5w, reported a completion last week, pumped 3 bbls. per day initial.

TO ALL

Natural Gasoline Men

Greetings

FROM THE

NATURAL GASOLINE SUPPLY MEN'S ASSOCIATION

We are looking forward to seeing you at the

SEVENTEENTH ANNUAL CONVENTION

of the

NATURAL GASOLINE ASSOCIATION OF AMERICA

May 11-13, Hotel Tulsa
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Woobank Pump & Machinery Company
Worthington Machinery Corp. of Oklahoma
Wyatt Metal & Boiler Works
John Zink Burner Company

The Glacier Production Co.'s wells in Cut Bank, which have been shut in since last fall, have been placed on regular production. The company is completing the second 80,000-bbl. storage tank at Cut Bank and has finished its loading racks on the Great Northern Railroad. The storage of oil has begun to build up a reserve for the Inland Empire Refineries, Inc., which last week began construction on its 2,500-bbl. refinery at Spokane, Wash. The crude is under contract to the new refinery which is being built by a subsidiary of the Wasatch Oil & Refining Co., of Salt Lake City. The same interests, through the Idaho Refineries, Inc., is constructing a 1,500-bbl. plant at Pocatello which, also, will run on Cut Bank crude. The Glacier company now has around 200,000 bbls. of storage capacity, and will run crude through its own pipe line which it acquired last fall by purchasing the line of the Toronto Pipe Line Co. in the field.

A. B. Cobb No. 1 Reagan-Jackson, SW SE NW sec. 5-32n-5w. Bldg rig. (first report).
Nadeau Bros. No. 5 Farmers State Bank, CEL SE NE sec. 17-33n-5w. Drlg. 2,100 ft.
Glacier Prod. Co. No. 2 Eisler, SW NE SW sec. 5-33n-5w. Drlg. 485 ft.; Colo. 445 ft.; 10¾-in. 470 ft.
Santa Rita O. & G. Co. No. 1 Jordan, NW NW SE sec. 18-32n-5w. Drlg. 2,150 ft.
K. D. Pardee No. 1 Drumheller, NE NW (C Lot 3), sec. 2-33n-6w. Drlg. 1,770 ft.
A. B. Cobb No. 1 State, C NE NE sec. 30-37n-4w. T.D. 2,592 ft.; S.D. until spring.

Lewis and Clark County

Lewis & Clark Oil Synd. No. 1 Heilman, NW NW SW sec. 11-18n-5w. Drlg. 2,455 ft.

Park County

Ben W. Ryan No. 1 Burgee, SE SW NW sec. 28-2s-11e. Drlg. 1,278 ft.

Toole County

There was one completion in the Kevin-Sunburst field in the Big West Oil Co. No. 6 Gunderson, CWL NE NW section 19-35n-2w, on the west side, which made 20 bbls. per day on the pump from the contact at 1,621-25 feet, after acidizing.

Casper T. Olen No. 7 Engelman, C NW NW section 14-35n-2w, which shut down last fall at 1,607 feet, 7 feet in the contact, has resumed to complete and has acidized with 1,000 gallons, a large dose for that field.

Boris A. S. Aronow No. 2 Govt., SW SE SW sec. 18-35n-2w. Drlg. 675 ft. (first report).
Fifty-six Pet. Co. No. 1 Keywood, C NW SW sec. 13-34n-4w. Drlg. 90 ft. (first report).
A. Beardslee No. 8 Swears, SE NW NW sec. 9-35n-2w. Spdg. 15 ft. (first report).
Big West Oil Co. No. 7 Gunderson, CEL SE NW sec. 19-35n-2w. Drlg. 1,140 ft.
Rimrock Oil Co. No. 4 Schmidt, CSL SW NW sec. 29-35n-3w. Drlg. 500 ft.
Pfabe & Engelking No. 2 Hurley, NE NE NW sec. 8-34n-2w. Loc.
Agen & Goeddertz No. 11 Goeddertz, SW NE SW sec. 23-35n-3w. Drlg. 1,160 ft.
Deloraine Oil Synd. No. 3 Solberg, SE SW NE sec. 29-35n-3w. Cmtd. 7-in. at 1,620 ft.; W.O.C.
H. C. Morton No. 8 Morton, C SW NW sec. 24-34-2w. S.D. 590 ft.
Chas. Grant et al No. 1 Anderson, SE NE NE sec. 26-35n-4w. S.D. 2,109 ft.
West Kevin Community Lease, Inc., No. 1 McClary, SW NE NW sec. 3-34n-4w. S.D.O. 2,000 ft.

Yellowstone County

Broadview Dome Oil Co. No. 1 Stallinberger, NE NE SW sec. 18-3n-23e. S.D. 4,565 ft.
Riverton Oil Co. No. 1 Fox, CEL NW NE sec. 14-2n-23e. T.D. 1,795 ft.; cmtd. 8¼-in. on bttm.; R.U.S.T.
R. C. Tarrant No. 3 Sayre, SE NE SW sec. 26-3s-4e. Drlg. 372 ft.

UTAH

Daggett County

Mountain Fuel Supply Co. No. 3-B Murphy, NW NW SW sec. 23-3n-24e. Drlg. 1,675 ft.

Grand County

Utah Southern Oil Co. No. 1 Hyde, SE NW NW sec. 33-22s-22e. T.D. 6,715 ft.
Columbia Crude Corp. No. 1 Rath, NW SW SE sec. 12-25s-20e. Drlg. 3,800 ft.
Cane Creek Oil Co. No. 1 Govt., NW SW sec. 31-26n-21e. S.D. 1,417 ft. to install control hd.; est. 3,000,000 ft. gas at 1,397 ft. and 1,414 ft.

Summit County

Longwell Pet. Co. No. 1, SE SW SE sec. 35-3n-5e. Drlg. 2,792 ft.; slight S.G.

NEBRASKA

Lincoln County

Smith & Wright No. 1 Hansen, C SW NW sec. 24-15n-31w. Drlg. 3,210 ft.; rumored S.O. was oil run to restore clr.

Sioux County

Union Oil Co. of Calif. No. 1 Agate-15, NW SE SE sec. 15-28n-55w. Drk.; M.I.M.

NORTH DAKOTA

Williams County

California Co. No. 1 Kamp, C NW NE sec. 3-154n-96w. S.D. 6,750 ft.

Central West Fields

(Continued from Page 75)

Genevieve lime was topped at 1,205 feet and St. Louis, Salem and Warsaw were penetrated.

Effingham County: Kingwood Oil Co. and others No. 1 McWhorter, C E half SE NW section 15-6n-6e, total depth 3,643 feet, reaming to run 8-inch pipe to 2,750 feet.

Edwards County: Leach Brothers No. 1 A. D. Lee, SW NE SE section 11-1s-10e, drilling at 3,197 feet.

Fayette County: Carter Oil Co. No. 1 Larrimore, SE NE NE section 11-8n-3e, drilling at 740 feet; Carter No. 1 Bartemus, C W half SE NE section 15-8n-3e, Benoist sand at 1,486-98 feet, shot with 20 quarts, cleaning out; Carter No. 1 Main, C W half NE SE section 15-8n-3e, coring at 1,541 feet, Cypress sand at 1,426 feet and water at 1,460-86 feet; John Farrelly No. 1 Lilly, SE cor. SW SE section 16-8n-3e, Benoist sand saturated at 1,563-70 feet, drilling ahead; Sam Jarvis No. 1 Mize, NE cor. NW NE NE section 21-8n-3e, spudded.

Jasper County: Obermyer No. 1 Atkins, NW NW NE section 3-6n-9e, drilling at 2,687 feet.

Jefferson County: Carter Oil Co. No. 1 Breeze, NE NE NE section 16-1s-2e, drilling at 1,410 feet; Nollem & Benoist No. 1 Kelly, NE NW NE section 25-4s-2e, pumps 12 bbls. per day and pumps off, may be drilled deeper or reacidized; Dee & Foltz No. 2 Hamilton, SW SW NE section 20-4s-3e, drilling at 2,125 feet in lime and shale.

Marion County: Dalton Oil Co. No. 1 Dalton, NW SE NE section 19-1n-3e, drilling below 800 feet; R. E. Dalton No. 1 Clifton, NE cor. SE SW section 15-1n-4e, drilling below 1,800 feet.

Massac County: Kahle and others No. 1 Harvick, SW SW SW section 23-14s-3e, total depth 2,875 feet, making repairs.

Piatt County: Max Pray and others No. 1 Baker, SW NE NE section 17-18-6e, spudded.

Richland County: Pyramid Petroleum Corp. No. 1 University of Chicago, NW NW NW section 26-4n-10e, flowed 213 bbls. of oil in four hours from pay at 3,030½-36 feet. It was not yet completed.

Saline County: C. F. Bolton and others No. 1 Beagle, NW cor. NE section 13-9s-7e, drilling at 2,387 feet.

White County: Mazda Oil Corp. No. 1 Meade, NE NE NE section 26-5s-9e, drilling at 990 feet.

INDIANA

Carter Oil Co. No. 1 Louisa Paddock, C S half NE NE section 16-10-10w, Vigo County, Indiana, completed in March at 2,135-50 feet with an initial production of 32 bbls. of oil and 1,500,000 feet of gas after a 1,000-gallon acid treatment, was deepened to 2,158 feet and acidized with 2,000 gallons. It is now making 100 bbls. a day on the pump.

Ben D. Ruble No. 1 Lydia Brewer heirs, SE SW SE section 33-3n-5w, Daviess County, was dry and abandoned at 600 feet where it uncovered sulfur water. W. F. Sowers No. 1 Helderman, SW cor. NE NE NE section 35-2n-5w, Daviess County, was abandoned as dry at 799 feet.

CENTRAL OHIO

LIMA, Ohio, May 2.—In Central Ohio, Ashland and Belmont counties reported the best gas completions of the week.

In Ashland County, Hanover Township, Mehowa Oil & Gas Co. No. 3 Dr. Burnsides, section 15, made 1,300,000 feet of gas from the Clinton sand at 2,646 feet.

In Belmont County, Somerset Township, Huntsman & Peters No. 2 William Schneider, section 2, is good for 1,500,000 feet of gas per day from the Keener sand at 1,374 feet.

In Licking County, Mary Ann Township, Settles Oil Co. No. 5 P. F. Shannon, Lot 10, fourth quarter, made 12 bbls. of oil the first 24 hours after shot from the Berea sand at 766-75 feet.

In Knox County, Jefferson Township, East Ohio Gas Co. No. 1 Benjamin Kaylor, section 18, found the Clinton sand dry at 2,917-31 feet. It was abandoned.

In Monroe County, Washington Township, H. B. Walker No. 4 Herman Rinard, section 5, made 10 bbls. of oil the first 24 hours after a shot in Injun sand at 1,316-19 feet. In Wayne Township, Richfork Oil Co. No. 1 J. A. Hartshorn, section 19, made a small gas well in the Berea sand at 1,853-57 feet.

In Perry County, Clayton Township, Preston Oil Co. No. 1 William H. Pettit, section 17, flowed 10 bbls. of oil naturally the first 24 hours from the Clinton sand at 3,190 feet.

Washington County, Muskingum Township, McVey Oil & Gas Co. No. 2 Theresa Arnold, section 8, is good for 120,000 feet of gas per day from Maxon sand at 1,355-85 feet. In Liberty Township, Koon Run Oil & Gas Co. No. 1 A. J. King, section 22, is a combination well making 305,000 feet of gas from the Maxon sand at 1,208-13 feet, and 10 bbls. of oil from the Keener sand at 1,295-98 feet. In Barlow Township, Dewitt No. 22 F. Fisher, section 6, was dry in the Second Cow Run sand at 827-59 feet.

In Wayne County, Canaan Township, Harley Bros. No. 2 Kenneth Badger, section 8, found the Berea sand dry at 586-6-15 feet. In Clinton Township, Ohio Fuel Gas Co. No. 1 Charles Blake, section 7, was drilled to 3,215 feet and abandoned as dry. The Clinton sand was found at a depth of 3,156-63 feet.

Lima Field

In Wood County, Jackson Township, George Spohn and others No. 1 Abram Hawkins, section 21, topped the Trenton rock at 1,481 feet. A show of gas was encountered at 1,490 feet, and an oil showing at 1,500-14 feet. A 100-quart shot caused only a small increase in the natural showing. At present the operators are undecided.

A. J. West, owner of the deep test on the Alex Crouse farm north of Tiffin in Seneca County, reports the well good for 40 bbls. a day pumping into tanks. The gas pressure is said to be increasing. The total depth is given as 2,025.5 feet in Green sand, which was shot with 40 quarts. The Sun Oil Co. has made a location on an adjoining farm.

EASTERN KENTUCKY OPERATIONS

ASHLAND, Ky., May 2.—An oil well and a gas well completion without reported production and two other completions are included in the report from the Eastern Kentucky field this week.

Perkins & Schmidt completed No. 1 Stewart Heirs No. 2 land, on South Fork in the South Fork district of Powell County. South Penn Oil Co. completed No. 14 Adams & Lamberson in the same locality. The Perkins & Schmidt well is making 6 bbls. of oil daily, while the South Penn well is a 3-bbl. producer.

Floyd Fitch completed well No. 1 on the P. M. Williams farm in the Hell Creek district of Lee County. This is reported to be a small well.

The Kentucky-West Virginia Gas Co. completed No. 569 Jeff Davis farm on Home Branch of Buffalo Creek at a total depth of 2,555 feet in White slate but the gas production has not yet been reported.

Other operations by counties are as follows:

In Lee County, Amp. Burnett is down 900 feet in No. 1 Day Coal Co.

In Magoffin County, C. J. Sipple & Co. were drilling at 900 feet in No. 7 William Salyer land on Birch Branch in the Burning Fork district.

In Floyd County, Kentucky-West Virginia Gas Co. is building rig at No. 567, M. Slone and M. D. Slone, on Levisa Fork in Floyd County. The same firm was drilling at 1,532 feet in No. 570 Clarence Neeley on Home Branch of Buffalo Creek. The Inland Gas Corp. is drilling at 500 feet, in sand, in No. 200 on the Layne Heirs land on Toms Creek.

The Kentucky-West Virginia Gas Co. is moving to location of No. 572, G. W. Taylor land, Home Branch, Buffalo Creek.

In Martin County, Kentucky-West Virginia Gas Co. is rigging up No. 573, Jennie Caldwell land, on Peg Fork of Coldwater Fork. The same firm is down 1,908 feet in Sunbury shale in No. 5238, M. M. Pratt land, Coldwater Fork; is idle at No. 5240 on the C. W. Preece land on Coldwater Fork and is rigging up No. 5241, on the same land.

In Pike County, Inland Gas Corp. is building rig at No. 199, Helen Leslie land, on Hammond Branch of Levisa Fork in Pike County.

In Knott County, Inland Gas Corp. is down 1,533 feet, in Maxon sand, in No. 198 on Maryland Beverly land on the Right Beaver.

WESTERN KENTUCKY

OWENSBORO, Ky., May 2.—The McClosky sand strike in Henderson County was the important news of the week in western Kentucky during the past week. A more extended account of the discovery and its significance is given elsewhere in this section. The well is flowing 40 bbls. per hour into barges and five locations have been made around it. Four other oil wells, one gas well and one dry hole were completed in western Kentucky in the past week.

Breckinridge County, Glen Dean district: V. C. Hastings No. 1 John Owens, 94,000 feet of gas per day, Bethel sand, 252-60 feet. Bryant & Patton No. 2 J. E. Johnson, spudding in. South Penn Oil Co. No. 1 W. H. Whitler, old well drilling deeper.

Daviess County, Utica district: Daugherty & Ellis No. 1 Berkley Heirs, drilling at 85 feet.

Hancock County, Easton district: J. C. Ellis No. 16 R. A. Richards, 20 bbls., Jett sand 265-92 feet, total depth 297 feet, shot 120 quarts; No. 17 Richards, Jett sand 297-330 feet, total depth 332 feet, shot with 140 quarts, 35 bbls. J. C. Ellis No. 14 Thelia Richards, spudding in. Fiesher, Galey and others No. 1 J. H. Brown, dry hole, total depth 346 feet, Bethel sand 308-36 feet.

Henderson County, Hamilton Ferry district: Hoosier Drilling Co. No. 2 C. T. Blackwell, location. Carter Oil Co. No. 1 Lannie Mauzy, moving in; No. 1 O. L. Boswell, west tract, location. W. E. Hupp and others No. 1 Mrs. Gatewood, moving in. J. C. Ellis No. 1 K. A. Jones, moving in.

McLean County, Island district: South Penn Oil Co. No. 1 Alma Nall, drilling at 1,000 feet; No. 2 C. Shutt, drilling at 925 feet. South Livermore district: Roy Mace and others No. 2 J. E. Howell, 60 bbls., Jett sand 1,137-60 feet, total depth 1,162 feet, shot with 110 quarts.

Ohio County, Adaburg district: Nollem Oil & Gas Co. No. 16 Vincent Crowe, 15 bbls., Jett sand 597-613 feet, shot with 70 quarts, total depth 615 feet. Friendship Church district: A. Teller and others No. 15 A. A. Whitehouse, drilling at 400 feet. Taffey district: J. C. Ellis No. 7 J. S. Bartlett, spudding in.

Webster County, Sebree district: I. B. Browning and others No. 1 J. R. Ramsey, deep test, drilling at 1,223 feet.

Eastern Fields

(Continued from Page 66)

others. In Dekalb district, Paul K. Weekley is building rig for the O. S. Brannon test, and drilling at 648 feet in the George C. Ellyson test. In Center district, H. B. Scott has reached 830 feet in the Worthy Moore test.

In Cabell County, Hess Gas Co. has material on the Maude May farm in Barboursville district. In Grant district, R. H. Adkins, trustee, is down 850 feet in the Jerusha Beckett test.

In Harrison County, the Eagle Gas Co. made a location on the A. J. Harbert farm in Eagle district, elevation 956.68 feet.

In Putnam County, V. C. Smith, manager, is drilling at 2,680 feet in the East End Land Co. test, in Teays Valley district. In Scott district, H. H. Pine has part material ready for the P. S. Eggleton test. The Smith Oil & Gas Co. has part of the material on the ground for the A. B. Griffith test.

Michigan Field Report

By
O. C. PRESSPRICH

15 New Oil Wells in Three Counties, Allegan Leading

SAGINAW, Mich., May 2.—Three of Michigan's oil producing counties shared honors for the week by adding 15 oil wells to the daily potential output, with Allegan County again having the lion's share in numbers and total output as well as the largest single well. Allegan County added six producers for the week, topped by a 500-bbl. natural well and an 800-bbl. acidized producer. Lower Buckeye (Oard) ranked second with five new wells, while Midland County's Edenville pool, puzzle spot of the Michigan industry, increased its average with a natural producer, three acidized producer and one dry hole.

Spring production activity, which shot the graph sharply upward two weeks ago, maintained its climb in active fields, indicating a busy summer ahead.

Three of Allegan County's oil producing townships appeared in the production chart of the week, led by the increasingly prolific Salem Township. More than 1,500 bbls daily was reported in Allegan, led by a 500-bbl. producer at Regal Dutch Petroleum Co. No. 6 Hardy, SE SE NW section 21-4n-13w, and an 800-bbl. acidized well, L. W. McIntosh No. 1 Dalrymple, NE NW NW section 16-3n-13w, only producer of the week for the Monterey field. Salem Township also recorded two small producers, Michigan Devonian Petroleum Co. No. 5 Brower, SE SW SE section 17-4n-13w, a 40-bbl. well after acid, and Muskegon Oil Corp. No. 1 Miller, NE SW NE section 17-4n-13w, rated at 25 bbls. daily after acid. Dorr Township added two producers in Allegan, both rating 100 bbls. after acid. They were Vestor Leonard Oil Co. No. 1 Bachman, SE SW NE section 30-4n-12w, and Columbia Oil & Gas Co. No. 1 Siewald, NW NE SW section 29-4n-12w. The week was the second in April in which Allegan County development topped other Michigan fields, including the famous Buckeye, as well as having the ranking single producer.

Edenville's "question-mark" pool removed some doubt but still was far from proving the boundaries in relation to the discovery wildcat. All of the week's developments centered in sections 26 and 27, less than a mile from the discovery well. Gordon Oil Co. No. 1 Verity, NW SW NW section 26-16n-1w, jumped its production from 175 bbls. natural to an acid-treated 500 bbls. daily to run the largest potential of the week. Mammoth Producing & Refining Corp. No. 2 Higgins, NW NW NE section 27-16n-1w, offset by dry holes to the north and west, developed a 200-bbl producer, while Mammoth No. 1 Higgins, SW NW NE section 27, shutdown recently to await acid, came into production after acid at 100 bbls. daily. No. 2 Higgins also is scheduled for acid. Garfield Petroleum Corp. No. 1 Higgins, SE NE NW section 27-16n-1w, stepped up its production with acid to an estimated 200 bbls., and Chapman Oil Co. No. 2 State, south offset to the discovery well in the area, SW SW NE section 27-16n-1w, swabbed about 40 bbls. Tubing was being run late in the week to make ready for acid. Gordon Oil Co. No. F-1 State, NW NW NW section 35-16n-1w, about ¾-mile south of Gordon No. 1 Verity, a 500-bbl. acidized producer, was the apparent dry hole in Edenville for the week. Operators were still drilling at the test, however, and had pushed 70 feet into the Dundee limestone without a show. The Dundee was logged 53 feet lower than in surrounding tests. Last week M. L. Jorgensen's No. 1 Gamble, NW NE SW section 25, 1½ miles east of the Gordon-Verity well was abandoned as dry. Meanwhile Sun Oil Co. was reported having difficulty checking a 400-bbl. oil flow sufficiently to run tubing to acidize its No. B-1 State, NW NW SE section 27-16n-1w, two locations south of Chapman's discovery. Present trends of production in the Edenville area continue to bear in a southerly and easterly development, although tests up to 1½ miles east and also south have proved failures.

Gladwin County—Buckeye Township

Buckeye has five new wells. The development, however, was in the south (Oard) pool, the north (Wicklund) pool failing to bring in any new production. A 500-bbl. natural producer in the discovery section of the so-called midway pool which enjoyed a brief geographical distinction before a string of producers united it definitely with the south pool proper lead the new ones in Buckeye. It was Kirkham-Kales Co. No. 4 Armstrong, SW SW SW section 23-18n-1w, which established itself as one of the best producers in the area. Marshall Bauman's No. 2 Hostetler, SE SE NE section 27-18n-1w, which recently burned its rig when on top of the Dundee, came in with 150-bbl. daily natural production. The test is a west extension.

Three acid-treated tests entered the production column, all in section 26. They were R. L. Tope's No. 7 Buehler, NW SW NE section 26-18n-1w, stepped up to 300 bbls. daily; Voorhees Drilling Co. No. 4 Fritzwater, SE NE NE section 26-18n-1w, rated 100 bbls. daily, and Rex Oil & Gas Co. No. B-1 Ruck, SE SW SW section 26-18n-1w, rating less than 50 bbls.

Gladwin County—Bentley Township

Drilling activity was apparent in Bentley Township, with eight or more tests in various sectors drilling Dundee-ward in various stages of completion. Several were due to hit pay this week. Bentley is showing more activity than any other Gladwin County field, although lacking in completions.

Clare County

Two oil test failures were recorded in as many Clare County townships. In Sheridan Township (17n-3w) Big Basin Oil & Refining Co. No. 1 Rilett, NW NW SE section 26, logged a failure, while Gulf Refining Co. No. 1 Doherty, SW SW SW section 25-17n-4w, north offset to its 14,000,000-foot gasser also was apparently dry and facing abandonment. The test passed 90 feet in the Dundee without an oil show. Formations were reported low, and the Michigan "stray" sand, from which the heavy gasser was tapped recently, was reported very shallow in the Doherty test.

Saginaw County

Another attempt testing for a Saginaw County oil pool in Bridgeport Township failed last week, when Bridgeport Oil & Gas Co. No. 1 Tobias SE SW SW section 35-11n-5e, faced abandonment.

Arenac County—Clayton Township

While Arenac County dominated the previous week's field reports, only one completion was recorded last week, although activity was reported brisk, due mostly to Swanson Consolidated Oil Co. 750-bbl. initial at its No. 3 Shepherd in section 4-20n-4e, last week. The completion was Weber Oil Co. No. 2 Dodge, SW NE SW section 4-20n-4e, which rated 50 bbls. the first hour, then dropped somewhat. The well will be acid-treated.

Ogemaw County

One wildcat test about 8 miles north of the West Branch pool was being watched this week as it tested the Dundee limestone. It was Pure Oil Co. No. A-1 State-Ogemaw, C N half NW NW section 36-24n-1e. Newell & Woughter also were testing a hole full of oil at the No. 2 Poole, SE NE SE section 36-22n-2e. Two other tests are due to strike the Dundee soon, Weber Oil Co. No. 1 Gallagher, SW SW SE section 26-22n-2e, and Great Western Petroleum Corp. No. 2 Mills Estate, SW SW SW section 31-21n-4e, less than a quarter-mile southwest of the discovery well in the Clayton-Arenac pool.

Drilling Activity Expanding

Drilling activity in Michigan fields continues to expand as better weather removes early spring handicaps. This is evidenced by the growth of the weekly permit lists of the state conservation department, which the past week issued 29 drilling licenses, all but one of them for oil tests.

The Edenville, Buckeye, Bentley and Allegan pools all but monopolized the list. Edenville and Buckeye took nine permits each, while Bentley took three and Allegan County five, divided between three separate areas now under development.

The one permit for a gas test was taken by Taggart Bros. for a well in section 16, Aetna Township, Mecosta County.

Canadian Fields

Completions and Operations in Northwest and in Ontario

By VICTOR LAURISTON

CHATHAM, Ontario, Apr. 30.—Production of crude petroleum and natural gasoline from all Canadian fields in February totaled 413,158 bbls. compared with 457,308 bbls. in January and 153,906 bbls. in February, 1937. For the two months of 1938 the production was 870,466 bbls. against 294,984 bbls. in the same period last year.

New Brunswick production was 7 bbls. in February against 56 in January. Ontario production dropped from 13,156 bbls. in January to 11,564 bbls. in February; and Alberta production from 444,196 to 401,587 bbls. The daily average for all Canada was 14,342 bbls. in February against 14,752 bbls. in January.

Prairie Sets New Record

On the west flank of South Turner Valley, Prairie Royalties No. 1, LSD 16, section 17-18-2w5, established a new production record on the recent official tests for new potentials. Previous tests showed 1,490 bbls. potential with 626 bbls. allowable. On the open flow test, taken after 10 days continuous production to its full allowable quota, the well flowed 4,070 bbls. in 24 hours, being 1,000 bbls. more per day than the next largest producer, Commoil No. 1, which previously held the record for the field. Under the new rules, potential was set at 66⅔ per cent of actual open flow, or 2,660 bbls. On this potential the allowable, at present 42 per cent, will be based. Improvement in the system of acidization is believed the main factor in bringing about the increased flow.

Wells Increase Production

The series of government tests for new potentials have been completed, and early reports indicate a very general increase in most wells, with the new aggregate crude potential for the field estimated around 34,000 bbls. a day, bringing the output close to that of the Trinidad field, the largest producing area in the British Empire. With new completions the Turner Valley potential is expected in the next few month to surpass that of Trinidad.

New Completions

In section 32-18-2w5, West Turner Petroleums No. 1, LSD 2, finished at 7,274 feet after getting the Madison limestone at 6,832 feet, was given a provisional potential of 1,318 bbls. a day, before acidizing. The well was started over a year ago by West Turner Petroleums, backed by Vancouver interests. It was completed by Royalite Oil Co. from 2,659 feet for 55 per cent participation in production. Location offsets Commoil No. 1 producer to the north, and it is expected to reach close to 3,000 bbls. after acidization.

Sunburst Oil Co. No. 1, N half LSD 1, section 29-18-2w5, finished at 7,157 feet, is making between 550 and 580 bbls. a day. Brown Oil Corp. No. 4, LSD 4, section 21-18-2w5, finished at 6,721 feet after getting the Madison at 6,253 feet, has potential of 913 bbls. before acidizing, prorated at 383 bbls. Davies Petroleums No. 1, LSD 2, section 29-18-2w5, finished at 7,375 feet after getting the Madison at 6,898 feet is reported a good commercial well after delayed completion, due to bridging, with production estimated around 1,000 bbls.

Tests in the Lime

In the far south end of the field, National Petroleum Corp. No. 2, LSD 14, section 9-18-2w5, is below 7,350 feet after getting the lime at 7,070 feet, and will be completed within a few days. Separators and tankage have been installed. Drilling in the lime indicates marked porosity, and large producer is expected. Production will extend the proven field nearly a mile to the south of Brown Oil Corp. No. 1, the present southernmost producer.

In section 17-18-2w5, Sundance Royalties No. 1, LSD 9, has the limestone somewhat below 6,939 feet.

West Side Drilling

In section 6-19-2w5, East Crest Oil Co. No. 4, LSD 8, is below 1,077 feet.

In section 32-18-2w5, Royalite Oil Co. No. 30, LSD 11, is below 6,789 feet after getting the Home sands at 6,660 feet. The lime is expected around 7,000 feet. Davies Petroleums No. 4, LSD 10, is moving equipment from No. 1. West Turner No. 3, LSD 6, is rigging.

In section 29-18-2w5, Commoil No. 2, LSD 10, is below 1,473 feet. Globe Royalties No. 1, LSD 7, is below 6,460 feet with the Madison limestone expected around 7,000 feet. Model-Spooner-Reward No. 2, S half LSD 1, is below 6,590 feet and getting close to the limestone.

In section 20-18-2w5, United-Brown Petroleums No. 5, LSD 1, is below 6,229 feet.

In section 16-18-2w5, Brown Oil Corp. No. 5, LSD 12, is rigging rotary equipment from No. 4 producer.

In section 9-18-2w5, Marine Petroleum No. 1, LSD 11, offsetting National Petroleum Corp. No. 2 to the south, has spudded, and is below 100 feet.

In section 5-18-2w5, P. & H. Development Co. No. 1, LSD 7, is riging, to spud early in May.

In section 33-17-2w5, Davies Petroleums No. 3, LSD 7, is below 2,950 feet.

In section 16-17-2w5, Firth Petroleums No. 1, LSD 6, is below 150 feet.

National Petroleum Operations

National Petroleum Corp. No. 1, LSD 8, section 29-18-2w5, completed on December 3, is producing around 1,000 bbls. a day from the lime, and up to April 22 had yielded more than 76,000 bbls. From a maximum of 28,000 bbls. in storage in February, stocks have declined to around 10,000 bbls. Production is not under proration, being marketed to independent refiners as far east as Brandon and to farmers who use the raw crude for tractor fuel. The average price is around $1.20 a barrel. National Refineries, Ltd., has been incorporated under Alberta charter with capitalization of $20,000 to provide a refining and distributing outlet in Alberta.

New Tests Starting

In West Central Turner Valley, Royalite Oil Co. No. 33, LSD 2, section 5-19-2w5, is rigging for a test to offset No. 28 producer to the north.

In section 29-18-2w5, P. & H. Development Co. No. 2, LSD 13, is rigging. Location is approximately a half mile west of Commoil No. 1 producer, and well down the flank of the structure. It will spud early in May.

In section 9-18-2w5, Baroils No. 1 (formerly Mid Royal Oils No. 2), LSD 3, has resumed and is deepening below 1,015 feet. The test is sponsored by the Brown, Moyer & Brown interests.

In section 5-18-2w5, Theo Grewer No. 1, LSD 14, is spudding.

Okalta Structure

On the Okalta fold, west of Turner Valley, Okalta Oil Co. No. 6, LSD 3, section 30-18-2w5, is below 6,625 feet, and getting close to the Madison after encountering some faulting. Location is about 2 miles west of the proven crude area.

Scottish Petroleums No. 1, LSD 16, section 19-18-2w5, is below 1,020 feet.

North Turner Valley

In North Turner Valley, Home Oil Co. No. 2 Millarville, LSD 6, section 33-20-3w5, is below 600 feet.

East Side Drilling

On the New Valley structure, northeast of Turner Valley, McLeod Oil Co., LSD 4, section 6-21-2w5, is preparing to resume from 8,462 feet after a shutdown of several months.

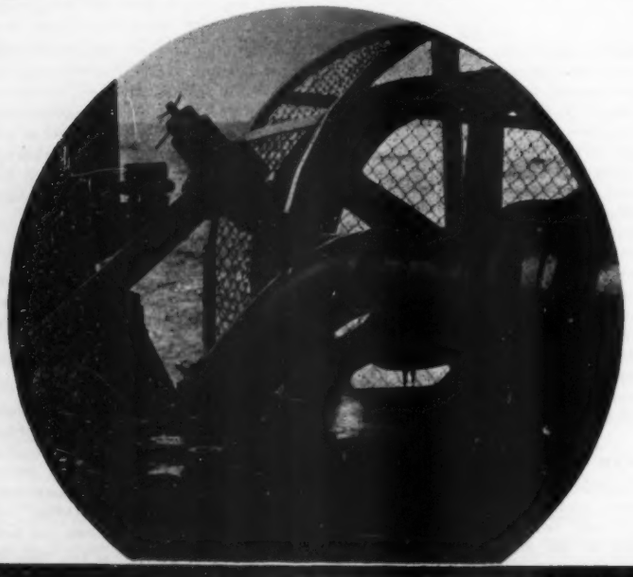
On the Calling Valley structure, east of Turner Valley, Sentinel Oil Co. No. 1, LSD 1, section 8-20-2w5, is preparing to resume. It has 8-inch hole drilled to below 6,750 feet.

On the Aldersyde structure, Ranchmen's Oil Co. No. 1, LSD 16, section 13-20-29w4, is fishing at 7,230 feet.

Pouce Coupe Drilling

In the Pouce Coupe district, in the northern foothills west of Peace River, Batcheller Syndicate No. 1, section 24-79-12w6, is below 950 feet after getting

(Continued on Page 96)



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WILDCAT OPERATIONS

CALIFORNIA

IMPORTANT WELLS AND NORTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Wilshire Oil, No. 1 Gaviota, Santa Barbara	35- 5-33	3,391	gr. sd. drlg.
South Crude Oil, No. 2-191 Coal Oil Point, S. Barbara	tideland	5,510	will deepen
Ohio Oil, No. 1 Morrison, Santa Maria, Santa Barbara	27-10-34	4,462	sd. sh. drlg.
Hancock-Bush, No. 2 Bradley, Santa Maria, S. Barb.	26-10-34	4,497	sd. sh. drlg.
Getty, George, Inc., No. 4 Vicente, Santa Barbara	27-10-34	3,760	sd. sh. drlg.
Bankline Oil, No. 1 Silva, Santa Maria, Santa Barbara	7- 9-33	2,370	sd. sh. drlg.
Hanoli Oil, No. 1 Holser, Santa Maria, Santa Barbara	27-10-34	4,790	sd. sh. drlg.
Cal. Lands, Inc., No. 4 Gallison, Santa Maria, S. Barb.	26-10-34	5,005	sd. sh. drlg.
Cal. Lands, Inc., No. 1 MacDonnell, S. Maria, S. Barb.	28-10-34	5,233	sd. sh. drlg.
Moore, E. H., No. 1-F Sugar, Santa Maria, S. Barbara	19-10-34	2,161	sd. sh. drlg.
Banducci, I. J., No. 1 B. & B., Santa Maria, S. Barbara	26-10-34	1,591	sd. sh. drlg.
Signal Oil, No. 1 Yelkin, Santa Maria, Santa Barbara	26-10-34	4,196	sd. sh. drlg.
Union Oil, No. 1 Stinson, Santa Maria, S. Barbara	28-10-34	5,128	sd. sh. drlg.
Union Oil, No. 3 LeRoy, Santa Maria, Santa Barbara	24-10-35	4,260	sd. sh. drlg.
Union Oil, No. 3 Bradley, Santa Maria, Santa Barbara	25-10-34	2,960	sd. sh. drlg.
Wilson Oil, No. 1-B Santa Maria, Santa Barbara	26-10-34	5,375	sd. sh. drlg.
Sunshine Oil, No. 3-W, Santa Maria, Santa Barbara	27-10-34	4,584	flow 1,160 b.d.
Jones, F. E., No. 2 Wisconsin, Santa Maria, S. Barb.	27-10-34	4,000	sd. sh. drlg.
Standard Oil, No. 1 Cat Canyon, Santa Barbara	27- 9-33	5,529	fish D.P.
Petrol Corp., No. 21 Tognazzini, Gate Ridge, S. Barb.	9- 8-32	2,180	sd. sh. drlg.
United West. Oil, No. 1 Los Olivos, Santa Barbara	16- 7-30	3,010	hd. sd. drlg.
Carpinteria Oil, No. 1 Carpinteria, Santa Barbara	31- 4-25	2,192	idle
High Mesa Oil, No. 1 Butcher, Ojai, Ventura	16- 4-22	1,380	hd. sh. drlg.
Rowe, W. G., No. 1 Johnson, Oxnard, Ventura	15- 1-22	4,115	redrlg. 4,091
Texas Co., No. 5 Yale, South Mountain, Ventura	13- 3-21	4,098	sd. sh. drlg.
Merchants Pet., No. 1 Sespe, Ventura	1- 4-20	183	sd. sh. drlg.
Continental Oil, No. 1 Elkins, Hopper Canyon, Vent.	23- 4-19	2,100	hd. sh. drlg.
C. C. M. Oil, No. 19 Hobson, Rincon, Ventura	17- 3-24	4,111	flow 290 b.d.
C. C. M. Oil, No. 20 Hobson, Rincon, Ventura	8- 3-24	4,657	flow 585 b.d.
C. C. M. Oil, No. 22 Hobson, Rincon, Ventura	17- 3-24	4,250	O.S. drlg.
Richfield Oil, No. 6 Hobson, Rincon, Ventura	17- 3-24	2,580	cmtd. 2,548
Tide Water A. O., No. 19 V.L.W., Ventura, Ventura	26- 3-23	8,307	hd. sd. drlg.
Tide Water A. O., No. 31 V.L.W., Ventura, Ventura	26- 3-23	7,093	sd. sh. drlg.
Tide Water A. O., No. 68 Lloyd, Ventura, Ventura	27- 3-23	4,760	sd. sh. drlg.
Tide Water A. O., No. 75 Lloyd, entura, Ventura	27- 3-23	1,198	sd. sh. drlg.
Tide Water A. O., No. 76 Lloyd, Ventura, Ventura	27- 3-23	3,280	sd. sh. drlg.
Tide Water A. O., No. 111 Lloyd, Ventura, Ventura	27- 3-23	7,144	will deepen
Tide Water A. O., No. 127 Lloyd. Ventura, Ventura	27- 3-23	1,872	sd. sh. drlg.
Tide Water A. O., No. 11 McGonigle, Ventura, Ventura	23- 3-23	4,651	sd. sh. drlg.
Shell Oil, No. 94 Taylor, Ventura Ave., Ventura	20- 3-23	8,000	sd. sh. drlg.
Shell Oil, No. 31 Edison, Ventura Ave., Ventura	20- 3-23	4,780	sd. sh. drlg.
Shell Oil, No. 37 Gosnell, Ventura Ave., Ventura	28- 3-23	5,971	sd. sh. drlg.
General Pet., No. 13 Notten, Ventura Ave., Ventura	28- 3-23	9,871	P.B. 9,080
Lloyd Corp., No. 1 Dabney-Lloyd, Ventura Ave., Vent.	24- 3-23	4,070	sd. sh. drlg.
Amerada Pet., No. 5 Beer, Devils Den, Kern	22-26-19	7,990	sd. sh. drlg.
Gibson Oil, No. 3 Alferitz, Devils Den, Kern	14-25-18	301	sd. sh. drlg.
Par-Mer Oil, No. 1 McKittrick, Kern	6-31-22	3,050	idle
Hampshire Oil, No. 1 McKittrick, Kern	26-30-22	1,780	br. sh. drlg.
Chico-Martinez Oil, No. 1 Holly, South Belridge, Kern	1-29-20	550	sd. sh. drlg.
Ohio Oil, No. 1 Ford, South Belridge, Kern	6-29-22	6,373	br. sh. drlg.
Belridge Oil, No. 27-5 North Belridge, Kern	27-27-20	5,274	br. sh. drlg.
Belridge Oil, No. 27-6 North Belridge, Kern	27-27-20	7,767	br. sh. drlg.
Belridge Oil, No. 35-26 North Belridge, Kern	35-27-20	6,793	br. sh. drlg.
Tide Water A. O., No. 3-21 North Belridge, Kern	21-27-20	4,795	br. sh. drlg.
Richfield Oil, No. 2 North Belridge, Kern	22-27-20	5,161	br. sh. drlg.
Texas Co., No. 3 Martin, North Belridge, Kern	22-27-20	8,100	sd. sh. drlg.
Texas Co., No. 4 Martin, North Belridge, Kern	22-27-20	4,740	br. sh. drlg.
General Pet., No. 1 St. Helens, Belridge, Kern	12-28-20	8,685	fish D.P.
Coast Expl., No. 1 Coffee, Round Mountain, Kern	6-28-29	1,979	pump 20 b.d.
Shell Oil, No. 1-J Coffee, Round Mountain, Kern	30-27-29	1,264	sd. sh. drlg.
Pan-May Oil, No. 1 Coffee, Round Mountain, Kern	31-27-29	674	sh. sd. drlg.
Crestmont Oil, No. 3 Staley, Round Mountain, Kern	8-28-29	1,682	O.S. drlg.
McDonald, H. A., No. 3 Larkin, Rd. Mountain, Kern	12-28-28	1,938	O.S. drlg.
Shell Oil, No. 19 Freeman, Round Mountain, Kern	20-28-29	1,052	sd. sh. drlg.
Kern Oil, No. 25-1-C Kern Front, Kern	25-28-27	2,007	rig to pump
Rubenstein, A. B., No. 1 Lerdo, Kern	20-28-27	3,302	pump water
Spencer Pet., No. 4 Lerdo, Kern	10-28-27	2,200	P.B. 2,175
Helm & Smith, No. 3-A Kernco, Kern River, Kern	34-28-28	428	sd. sh. drlg.
W. T. W. Pet., No. 2 Packard, Mount Poso, Kern	14-27-28	1,306	dry; abd.
Carter, J. P., No. 2 S.P.L., Mount Poso, Kern	3-27-28	1,473	P.B. 1,456
Shell Oil, No. 6-A Mathews, Mount Poso, Kern	4-27-28	1,671	O.S. drlg.
Seaboard Oil, No. 1 Glide, Mount Poso, Kern	7-27-28	2,660	gr. sd. drlg.
Bargol Oil, No. 2 Claflin, Mount Poso, Kern	10-27-27	2,210	sd. sh. drlg.
Framac Oil, No. 3 Brown, Mount Poso, Kern	22-27-27	1,351	cleaning out
Reynolds Oil, No. 1 Premier, Mount Poso, Kern	30-27-27	2,850	P.B. 2,704
Master Pet., No. 3 Recovery, Mount Poso, Kern	33-26-28	1,386	sd. sh. drlg.
Ring Oil, No. 4 Bohen, Mount Poso, Kern	32-26-28	1,663	pump 245 b.d.
Ring Oil, No. 4 Shapiro, Mount Poso, Kern	32-26-28	1,722	O.S. drlg.
Wilbur, V. B., No. 1 Fruitvale, Kern	22-29-27	4,181	P.B. 3,960
Wood Callahan Oil, No. 21-2 Edison, Kern	21-30-29	3,145	pump 30 b.d.
Union Oil, No. 1 Berry, Arvin, Kern	15-31-29	6,812	P.B. 5,780
Petrex, Inc., No. 1 Arvin, Kern	32-31-30	3,648	idle
Superior Oil, No. 3 Wagner, Rio Bravo, Kern	35-28-25	10,140	sd. sh. drlg.
Superior Oil, No. 1 Anderson, Rio Bravo, Kern	35-28-25	7,470	sd. sh. drlg.
Union Oil, No. 2-34 KCL, Rio Bravo, Kern	34-28-25	11,204	milling
Getty Oil, No. 1 Ramsey, Rio Bravo, Kern	35-28-25	11,250	sd. sh. drlg.
General Pet., No. 1 Wagoner, Rio Bravo, Kern	35-28-25	10,192	fish D.P.
General Pet., No. 2 Wagner, Rio Bravo, Kern	35-28-25	9,190	sd. sh. drlg.
Standard Oil, No. 18-1 KCL, Una, Kern	29-28-26	7,491	sd. sh. drlg.
Dilmar Oil, No. 1 Quinn, Jasmin, Kern	15-25-27	2,956	P.B. 2,875
Amerada Pet., No. 2 Core Hole, Jasmin, Kern	35-24-27	1,759	sd. sh. drlg.
Standard Oil, No. 11-2 KCL, Greeley, Kern	20-29-26	11,250	br. sh. drlg.
Standard Oil, No. 11-13 KCL, Greeley, Kern	20-29-26	7,780	P.B. 7,760
Standard Oil, No. 11-14 KCL, Greeley, Kern	18-29-26	7,851	sd. sh. drlg.
Standard Oil, No. 1 Ross, Greeley, Kern	20-29-26	7,698	sd. sh. drlg.
Continental Oil, No. 1-E KCL, Stevens, Kern	17-30-26	6,897	sd. sh. drlg.
Shell Oil, No. 41-29-A KCL, Ten Section, Kern	29-30-26	8,220	flow 2,637 b.d.
Shell Oil, No. 34-30-A KCL, Ten Section, Kern	30-30-26	7,352	sd. sh. drlg.
Shell Oil, No. 47-30-B KCL, Ten Section, Kern	30-30-26	2,960	sd. sh. drlg.
Shell Oil, No. 21-32-B KCL, Ten Section, Kern	32-30-26	6,960	sd. sh. drlg.
Shell Oil, No. 81-14-A KCL, Canal, Kern	14-30-25	8,247	O.S. drlg.
Shell Oil, No. 2-13-A KCL, Canal, Kern	13-30-25	8,350	flow 2,660 b.d.
Ohio Oil, No. 6-E KCL, Canal, Kern	14-30-25	3,996	sd. sh. drlg.
Ohio Oil, No. 8-A KCL, Buena Vista Lake, Kern	32-31-26	9,910	sd. sh. drlg.
Standard Oil, No. 11 Monarch, Midway-Sunset, Kern	7-11-23	1,320	sd. sh. drlg.
Berry & Ewing, No. 2 Midway-Sunset, Kern	31-32-24	761	O.S. drlg.
Whittier, M. H. Co., No. 16 Hondo, M'dway-Sun., Kern	15-31-22	1,286	P.B. 1,187
Texas Co., No. 1 Pioneer, Midway-Sunset, Kern	33-11-23	8,250	cleaning out
Texas Co., No. 31 Midway-Sunset, Kern	32-32-24	3,295	sd. sh. drlg.
Salling Oil, No. 9 Midway-Sunset, Kern	2-11-24	962	sd. sh. drlg.
Abbott, F. E., No. 12 Lewis, Sinset, Kern	20-11-23	3,695	sd. sh. drlg.
Hall-Baker Co., No. 1 Comanche Point, Kern	35-32-29	2,197	sd. sh. drlg.
Shell Oil, No. 4-26 KCL, San Emidio, Kern	26-11-22	8,770	sd. sh. drlg.
Richfield Oil, No. 1 KCL, Wheeler Ridge, Kern	28-11-20	1,965	gr. sd. drlg.
Pure Oil, No. 1 SPL, Santua, Fresno	31-18-18	10,862	fish D.P.
Gauthier, J., No. 2 Hubbard, Panoche Creek, Fresno	12-14-11	635	idle
Pet. Sec., No. 2 Gatchell, Jacalitos, Fresno	18-20-16	6,850	cmtd. 6,700
Dauphin Dev., No. 1 Alcalde, Fresno	30-21-14	3,778	redrlg. 1,972
Shell Oil, No. 35-1 Coalinga, Fresno	36-19-14	960	dry; abd.
K. N. D. A., No. 67-20-J Kettleman North, Fresno	20-21-17	10,546	tested wet
K. N. D. A., No. 72-4-P Kettleman North, Fresno	4-22-17	8,450	flow 1,880 b.d.
K. N. D. A., No. 6-8-Q Kettleman North, Kings	6-22-18	7,700	gr. sd. drlg.
K. N. D. A., No. 38-8-Q Kettleman North, Kings	8-22-18	7,372	gr. sd. drlg.
K. N. D. A., No. 27-16-Q Kettleman North, Kings	16-22-18	5,390	idle
K. N. D. A., No. 58-16-Q Kettleman North, Kings	16-22-18	5,500	cmtd. 5,500
K. N. D. A., No. 47-18-Q Kettleman North, Kings	18-22-18	7,707	gr. sd. drlg.
K. N. D. A., No. 43-20-Q Kettleman North, Kings	20-22-18	6,781	br. sh. drlg.
Standard Oil, No. 46-13-H Kettleman North, Fresno	13-21-16	9,760	sd. sh. drlg.
Standard Oil, No. 27-21-J Kettleman North, Fresno	21-21-17	10,920	O.S. drlg.
Standard Oil, No. 58-33-J Kettleman North, Fresno	33-21-17	7,561	gr. sd. drlg.
Standard Oil, No. 2-11-P Kettleman North, Kings	11-22-17	8,340	gr. sd. drlg.
Standard Oil, No. 78-1-P Kettleman North, Kings	1-22-17	5,390	sd. sh. drlg.
Standard Oil, No. 87-1-P Kettleman North, Kings	1-22-17	7,971	gr. sd. drlg.
Standard Oil, No. 21-13-P Kettleman North, Kings	13-22-17	7,248	redrlg. 5,580
Standard Oil, No. 41-7-Q Kettleman North, Kings	7-22-18	8,350	gr. sd. drlg.

KEY TO ABBREVIATIONS USED IN DRILLING REPORTS

Abd., abandoned.
Acd., acidized.
B.O., barrels of oil.
B.P.D., barrels per day.
B.D., barrels daily.
B.P., back pressure.
B.R., building rig.
Br. sh., brown shale.
B.S., basic sediment.
Cd. or Crd., cored.
C.D., corrected depth.
Cg., coring.
Cmtd., cemented.
C.O., cleaning out.
Comp., completed.
Compr., compressor.
C.P., casing pressure, also cement through perforations.
Csg., casing.
D.D., drilling (or drilled) deeper.
Drlg. or Drg., drilling.
Drk. or Dk., derrick.
D.S., drill stem.
D.&A., dry and abandoned.
Fsg., fishing.
Gbo., gumbo.
G.I., gas injection.
Gr., gravity.
Gr. sd., gray sand.
Grn. sh., green shale.
Hd. sd., hard sand.
H.F.W., hole full of water.
I.P., initial production.
L., lime.
L.D.D., later drilled deeper.
Lnr., liner.
Loc., location.
M.I.M., moving in material.
M.I.R., moving in rig.
M.I.R.T., moving in rotary tools.
M.O.T., milling on tools.
O.I.H., oil in hole.
O.S., oil sand.
O.T.D., old total depth.
O.W.D.D., old well drilling deeper.
O.W.P.B., old well plugging back.
P.B., plugging or plugged back.
P.B.P., pulling or pulled big pipe.
P.L., pipe line.
P.L.O., pipe line oil.
Pmpg., pumping.
P.O.P., putting on pump.
P.P., pulled pipe.
Rd. sd., red sand.
Rd. sh., red shale.
Recmt., recemented.
Rmg., reaming.
Redrlg., redrilling.
Rng., running.
R.O.G., rig on ground.
R.P., rock pressure.
R.U., rigging up.
R.U.R., rigging up rotary.
R.U.S.T., rigging up standard tools.
R.&T., rods and tubing.
S. or Sd., sand.
S.D., shut down.
Sdy. sh., sandy shale.
Sdtr., or St. sidetracking.
S.D.P.L., shut down for pipe line.
S.D.O., or S.D.W.O., shut down awaiting orders.
S.G., show gas.
Sh.&L., shale and lime.
S.I., shut in.
S.I.P., shut in, prorated.
S.L.M., steel line measurement.
S.O., show oil.
S.O.G.&W., show of oil, gas and water.
Spdg. or Spd., spudding.
S.R., straightreaming.
Stdg., standardizing (also standing).
S.W., salt water.
Swbg., swabbing.
T.A., temporarily abandoned.
Tbg., tubing.
T.D., total depth.
T.P., tubing pressure.
Tr., tract.
U.R., underreaming.
W.I.H., water in hole.
W.O., workover.
W.O.C. or W.O.C.S., waiting for cement to set.
W.P., working pressure.
W.S.O., water shutoff.
W.S.S.O.K., water shutoff O.K.
W.S.O.N.G., water shutoff no good.
W.S.R. or W.O.S.R., awaiting standard rig.
Wtr., water.

Standard Oil, No. 74-7-Q Kettleman North, Kings	7-22-18	6,003	sd. sh. drlg.
Standard Oil, No. 85-7-Q Kettleman North, Kings	7-22-18	7,312	sd. sh. drlg.
Bandini Pet., No. 5 Whepley, Kettleman N., Fresno	35-21-17	9,515	dry; abd.
Wilshire Oil, No. 1 Cowell, Half Moon Bay, S. Mateo	20- 6- 5	8,030	P.B. 2,525
Ohio Oil, No. 1-A Willard, Willows, Glenn	18-20- 2	1,174	sd. sh. drlg.
Standard Oil, No. 1 Anderson, Rio Vista, Solano	1- 3- 2	4,458	gas sand
Richfield Oil, No. 1 Potrero Hills, Solano	10- 4- 1	1,174	cmtd. 520

IMPORTANT WELLS AND SOUTHERN CALIFORNIA WILDCATS

Company, well, location, and county—	S. T. R.	Depth	Status—
Basin Oil, No. 1 Petrero, Los Angeles	34- 2-14	3,290	sd. sh. drlg.
Ohio Oil, No. 12 Gough, El Segundo, Los Angeles	7- 3-14	5,181	sd. sh. drlg.
Termo Co., No. 2 El Segundo, Los Angeles	12- 3-15	7,400	pump 100 b.d.
D. & B. Oil, No. 1 Lomita, Los Angeles	30- 4-13	3,198	sd. sh. drlg.
Patton, C. B., No. 1 Meacham, Torrance, Los Angeles	15- 4-14	4,977	pump 168 b.d.
McCaslin, W. E., No. 1 Whitney, Torrance, L. Angeles	23- 4-14	3,723	redrlg. 3,690
Torrance Oil, No. 1 Grubb, Torrance, Los Angeles	14- 4-14	4,978	pump 120 b.d.
Torrance Oil, No. 1 Lyman, Torrance, Los Angeles	14- 4-14	3,950	repair rig
Andrews & Mitchell, No. 5 Kirk, Torrance, L. A.	23- 4-14	5,105	sd. sh. drlg.
Anderson, N. H., No. 2 Torrance, Los Angeles	14- 4-14	4,964	pump 80 b.d.
McDonald & Burns, No. 3 Moore, Torrance, L. A.	23- 4-14	5,039	flow 590 b.d.
McDonald & Burns, No. 8 Moore, Torrance, L. A.	23- 4-14	3,775	will deepen
Emerald Oil, No. 1 fee, Torrance, Los Angeles	23- 4-14	5,120	pump 20 b.d.
Camp, C. W., No. 12 Torrance, Los Angeles	23- 4-14	4,797	sd. sh. drlg.
Doyle Pet., No. 1 Bond, Torrance, Los Angeles	23- 4-14	5,098	pump 30 b.d.
Doyle Pet., No. 3-A Getty, Torrance, Los Angeles	14- 4-14	4,364	sd. sh. drlg.
Elyod Oil, No. 1 Post, Torrance, Los Angeles	14- 4-14	4,998	pump 190 b.d.
Peso Oil, No. 1 Marcoux, Torrance, Los Angeles	23- 4-14	5,014	pump 425 b.d.
Timco Oil, No. 6, Torrance, Los Angeles	23- 4-14	4,788	deepening
Marel Oil, No. 1 Leaver, Torrance, Los Angeles	14- 4-14	5,023	sd. sh. drlg.
Woolner Oil, No. 1 Torrance, Los Angeles	14- 4-14	5,017	sd. sh. drlg.
Krause & Baker, No. 2 Gladys, Torrance, Los Angeles	14- 4-14	3,795	rigged up
Peters Royalty, No. 1 Torrance, Los Angeles	14- 4-14	4,870	sd. sh. drlg.
Consolidated Pet., No. 1 Torrance, Los Angeles	14- 4-14	3,760	milling 3,110
Texas Co., No. 5 Redondo, Torrance, Los Angeles	15- 4-14	3,628	pump 60 b.d.
Texas Co., No. 9 Wilson, Torrance, Los Angeles	15- 4-14	2,140	sd. sh. drlg.
Wilson, R. K., No. 1 Cook, Torrance, Los Angeles	14- 4-14	3,770	redrlg. 3,590
Standard Oil, No. 1 Martin, Torrance, Los Angeles	15- 4-14	4,805	sd. sh. drlg.
Superior Oil, No. 6 Torrance, Los Angeles	16- 4-14	4,948	sd. sh. drlg.
Imperial Gypsum, No. 1 De Witt, Torrance, L. A.	14- 4-14	4,196	sd. sh. drlg.
Imperial Gypsum, No. 2 Getty, Torrance, L. A.	14- 4-14	3,785	rigged up
Lakeside Oil, No. 2 Cook, Torrance, Los Angeles	14- 4-14	4,998	pump 170 b.d.
C. C. M. O., No. 13 Torrance, Los Angeles	14- 4-14	3,890	will deepen
C. C. M. O., No. 23 Torrance, Los Angeles	14- 4-14	4,694	sd. sh. drlg.
Fisher, N., No. 1 Washburn, Torrance, Los Angeles	23- 4-14	5,147	pump 50 b.d.
Berken Oil, No. 1 Star, Torrance, Los Angeles	16- 4-14	3,758	redrlg. 3,750
Shell Oil, No. 94 Reyes, Dominguez, Los Angeles	33- 3-13	6,870	sd. sh. drlg.
Union Oil, No. 58 Callender, Dominguez, Los Angeles	33- 3-13	7,594	redrlg. 7,570
Union Oil, No. 59 Callender, Dominguez, Los Angeles	33- 3-13	6,826	pump 150 b.d.
Union Oil, No. 60 Callender, Dominguez, Los Angeles	33- 3-13	7,750	sd. sh. drlg.
Union Oil, No. 8 Carson, Dominguez, Los Angeles	33- 3-13	7,510	sd. sh. drlg.
Barnsdall Oil, No. 3 Trust, Rosecrans, Los Angeles	18- 3-13	3,984	sd. sh. drlg.
Union Oil, No. 19 Rosecrans, Rosecrans, Los Angeles	18- 3-13	6,865	sd. sh. drlg.
Universal Consd., No. 3 Trust, Rosecrans, L. Angeles	18- 3-13	3,980	sd. sh. drlg.
Howard Oil, No. 1 Gordon, Rosecrans, Los Angeles	19- 3-13	6,596	redrlg. 2,060
H. B. Oil, No. 1 Stephens, Rosecrans, Los Angeles	18- 3-13	6,033	cleaning up
Barnsdall Oil, No. 3 S. F., Newhall, Los Angeles	26- 4-17	4,086	sd. sh. drlg.
Royal Lands, No. 1 Ramona, Los Angeles	8- 4-17	615	sd. sh. drlg.
West Coast Dev., No. 2 Broughton, Newhall, L. A.	27- 4-16	2,384	sd. sh. drlg.
General Pet., No. 30 Ford, Wilmington, Los Angeles	4- 5-23	1,164	sd. sh. drlg.
General Pet., No. 38 Ford, Wilmington, Los Angeles	4- 5-13	3,000	flow 1,010 b.d.
General Pet., No. 39 Ford, Wilmington, Los Angeles	4- 5-13	4,101	milling 3,440
General Pet., No. 8 Harbor, Wilmington, Los Angeles	2- 5-13	2,385	sd. sh. drlg.
General Pet., No. 11 Harbor, Wilmington, L. Angeles	2- 5-13	3,920	flow 2,650 b.d.
General Pet., No. 14 Harbor, Wilmington, L. Angeles	2- 5-13	2,905	O.S. drlg.
General Pet., No. 6 S.P., Wilmington, Los Angeles	2- 5-13	4,075	O.S. drlg.
Bankline Oil, No. 18 D.H.C., Wilmington, L. A.	34- 4-13	3,138	sd. sh. drlg.
Caleb Pet., No. 1 F.H., Wilmington, Los Angeles	32- 4-13	2,990	pipe bad
Dunlap Oil, No. 12 Wilmington, Los Angeles	2- 5-13	2,975	sd. sh. drlg.
Hogan Pet., No. 2 Graham, Wilmington, Los Angeles	2- 5-13	2,250	sd. sh. drlg.
Hancock Oil, No. 14-A Wilmington, Los Angeles	3- 5-13	4,050	flow 4,500 b.d.
Hancock Oil, No. 16-B Wilmington, Los Angeles	2- 5-13	2,170	sd. sh. drlg.
Hancock Oil, No. 17-C Wilmington, Los Angeles	2- 5-13	1,265	sd. sh. drlg.
Hollywood Oil, No. 1 Baxter, Wilmington, L. A.	2- 5-13	2,190	sd. sh. drlg.
Richfield Oil, No. 1-G Wilmington, Los Angeles	2- 5-13	6,078	P.B. 3,012
Richfield Oil, No. 2-P-D., Wilmington, Los Angeles	2- 5-13	2,600	sd. sh. drlg.
Richfield Oil, No. 3-P.D., Wilmington, Los Angeles	2- 5-13	2,651	sd. sh. drlg.
Richfield Oil, No. 6-P.D., Wilmington, Los Angeles	2- 5-13	2,480	sd. sh. drlg.
Richfield Oil, No. 26-P.D., Wilmington, Los Angeles	2- 5-13	2,731	O.S. drlg.
Richfield Oil, No. 3-R.O., Wilmington, Los Angeles	2- 5-13	1,971	sd. sh. drlg.
Richfield Oil, No. 1-P.G., Wilmington, Los Angeles	2- 5-13	3,900	O.S. drlg.
Richfield Oil, No. 4-P.G., Wilmington, Los Angeles	2- 5-13	4,315	O.S. drlg.
Silvergate Oil, No. 1 Wilmington, Los Angeles	32- 4-13	3,125	pump 270 b.d.
Texas Co., No. 3 Ref., Wilmington, Los Angeles	34- 4-13	3,445	P.B. 3,400
Termo Co., No. 3-D, Wilmington, Los Angeles	3- 5-13	3,450	O.S. drlg.
Termo Co., No. 4-D Wilmington, Los Angeles	3- 5-13	3,902	O.S. drlg.
Universal Consd., No. 5 Newport, Wilmington, L. A.	2- 5-13	2,374	sd. sh. drlg.
Union Pacific R.R., No. 73 Wilmington, Los Angeles	34- 4-13	2,655	sd. sh. drlg.
Union Pacific R.R., No. 81 Wilmington, Los Angeles	4- 5-13	3,711	P.B. 3,531
Union Pacific R.R., No. 3-E Wilmington, Los Angeles	3- 5-13	3,920	O.S. drlg.
Union Pacific R.R., No. 4-E Wilmington, L. A.	3- 5-13	3,937	O.S. drlg.
Union Pacific R.R., No. 5-E Wilmington, L. A.	3- 5-13	3,952	O.S. drlg.
Union Pacific R.R., No. 6-E Wilmington, L. A.	3- 5-13	2,180	sd. sh. drlg.
Pioneer Petrol, No. 1 Irvine, Wilmington, L. A.	26- 4-13	4,170	sd. sh. drlg.
Johnston Drlg., No. 1 Pico, Montebello, Los Angeles	5- 2-11	5,390	sd. sh. drlg.
St. Helens Pet., No. 25-M Montebello, Los Angeles	2- 2-12	5,480	sd. sh. drlg.
St. Helens Pet., No. 26-M Montebello, Los Angeles	2- 2-12	4,890	sd. sh. drlg.
St. Helens Pet., No. 27-M Montebello, Los Angeles	2- 2-12	2,687	sd. sh. drlg.
Union Oil, No. 1 Paul Howard, Montebello, L. A.	2- 2-12	6,244	sd. sh. drlg.
Union Oil, No. 1 Wilcox, Montebello, Los Angeles	2- 2-12	5,681	sd. sh. drlg.
Standard Oil, No. 2 Harvey, Montebello, Los Angeles	2- 2-12	2,081	sd. sh. drlg.
McVicar & Rood, No. 1 Manz, Montebello, L. Angeles	2- 2-12	5,375	sd. sh. drlg.
Brookline Oil, No. 1 Drake, Montebello, Los. Angeles	2- 2-12	2,460	sd. sh. drlg.
British American Oil Co., No. 1 Pico, Los Angeles	12- 2-12	4,062	sd. sh. drlg.
Monte Cristo Oil, No. 1 Monterey Park, Los Angeles	27- 1-12	4,559	sd. sh. drlg.
Fullerton Oil, No. 5 Whittier, Los Angeles	25- 2-11	2,325	dry; abd.
Colorado Oil, No. 19 Whittier, Los Angeles	22- 2-11	1,130	sd. sh. drlg.
Hilldon Oil, No. 1 Poole, North Long Beach, L. A.	13- 4-13	4,100	flow 710 b.d.
Hilldon Oil, No. 2 Poole, North Long Beach, L. A.	13- 4-13	3,298	sd. sh. drlg.
Signal Oil, No. 1 P.E., North Long Beach, L. A.	13- 4-13	3,760	sd. sh. drlg.
Johnston Drlg., No. 33 Long Beach, Los Angeles	13- 4-13	2,687	sd. sh. drlg.
Caminol Co., No. 1-8 Dominguez, Flood Control, L. A.	14- 4-13	4,846	sd. sh. drlg.
Kramildon Oil, No. 1 Long Beach, Los Angeles	13- 4-13	6,020	sd. sh. drlg.
Marvell Oil, No. 1 Long Beach, Los Angeles	19- 4-12	4,148	idle
Dunlap Oil, No. 13 Long Beach, Los Angeles	30- 4-12	4,053	sd. sh. drlg.
Texas Co., No. 1 Wilson, Long Beach, Los Angeles	29- 4-12	2,433	sd. sh. drlg.
Shell Oil, No. 44 Alamitos, Long Beach, Los Angeles	28- 4-12	5,250	sd. sh. drlg.
Richfield Oil, No. 5-B Long Beach, Los Angeles	13- 4-13	2,197	sd. sh. drlg.
J. E. F. Oil, No. 1 Schaaf, Huntington, Los Angeles	36- 5-11	3,990	sd. sh. drlg.
W. P. R. Oil, No. 3 Huntington, Orange	35- 3-11	7,410	P.B. 6,643
Brea Canyon Oil, No. 48 Brea Canyon, Orange	2- 2-10	2,820	sd. sh. drlg.
Standard Oil, No. 2 Bastanchury, W. Coyote, Orange	21- 3-10	5,951	sd. sh. drlg.
Standard Oil, No. 65 Emery, W. Coyote, Orange	24- 3-11	4,196	hd. sd. drlg.
Standard Oil, No. 66 Emery, W. Coyote, Orange	24- 3-11	4,200	sd. sh. drlg.
Standard Oil, No. 2-12 Coyote, E. Coyote, Orange	22- 3-10	4,321	pump 210 b.d.
Bartholomae Oil, No. 6 Sterns, E. Coyote, Orange	22- 3-10	4,857	O.S. drlg.
Millerand Pet., No. 1 Miller, Yorba, Orange	22- 3- 9	765	idle
Oliver & Owen, No. 1 Anderson, Yorba, Orange	22- 3- 9	1,363	P.B. 1,350
Pearl J. Oil, No. 1 Dobashi, Yorba, Orange	21- 3- 9	1,677	sd. sh. drlg.
Burmah Oil, No. 1 Sloan, Yorba, Orange	21- 3- 9	2,380	cmtd. 2,238
Kelmar Oil, No. 1 Yorba, Orange	21- 3- 9	2,510	gr. sd. drlg.
Hancock Oil, No. 1 Day, Yorba, Orange	21- 3- 9	2,475	sd. sh. drlg.
Congress Oil, No. 1-K, Santa Ana Canyon, Orange	36- 3- 9	3,014	idle

OKLAHOMA

Week Ending April 30

NORTHERN OKLAHOMA

Beckham County

Mid-American Oil Co. No. 1-A Biscoe, SW cor. sec. 28-8-22w. Drlg. 2,760 ft.

Cleveland County

W. A. Delaney et al No. 1 Bugher, SE SE SW sec. 12-7-2w. Drlg. 7,372 ft.

Cimarron County

Barnsdall Oil Co. No. 1 School Ld., C NW SE sec. 35-5-5ecm. Drlg. 2,200 ft.

Comanche County

Clyde Roach No. 1-A Green, SE SE SW sec. 2-1n-13w. T.D. 670 ft.; S.D.

Creek County

M. W. Mosier et al No. 1 Holcomb, SE SW NW sec. 19-18-8. T.D. 3,018 ft.; 2,-900 ft. W.I.H. and S.S.O.; S.D.

Garfield County

J. E. Kendall et al No. 1-A State, SW cor. sec. 13-23-3w. Spd.

Garvin County

First Natl. Oil Co. No. 1 Butterly, NE NE SE sec. 22-1n-1e. T.D. 100 ft.; R. U.R.

Grady County

Gulf Oil Corp. No. 1 Thomas, SW NW NW sec. 14-4-5w. T.D. 11,415 ft.; pipe stuck.

Greer County

J. H. Everitt No. 1 Graumann, NE NW NW sec. 11-5-21w. T.D. 550 ft.; S.D.

R. W. McDonald No. 1 Fite, SE SE sec. 34-7-21w. T.D. 1,114 ft.; H.F.W.; S.D.

Hughes County

Homer Doup et al No. 1 Bank, NE NE NW sec. 7-7-9. Drlg. 905 ft.

E. H. Moore et al No. 1 Hunter, NE NE NW sec. 30-4-9. T.D. 5,969 ft.; D.&A.

Phillaine Oil Co. No. 1 Morrison, SE SE SW sec. 13-9-10. Cg. 3,965 ft.

Phillips Pet. Co. No. 1 Becker, NE NW SW sec. 8-5-10. T.D. 6,286 ft.; plug. 5,612 ft.; drld. out to 5,660 ft.; flwd. 287 bbls. in 24 hrs., cutting 15%.

Troup & Strickland No. 1 Brown, NW SW NE sec. 32-6-8. S.D. 660 ft.

Kay County

E. J. Shaffer et al No. 1 McKee, NE NW sec. 20-28-1w. T.D. 2,500 ft.; S.D.

Kiowa County

Anderson-Prichard Oil Corp. No. 1 Cribbs, sec. 28-7n-19w. Drlg. 815 ft.

Anderson-Prichard Oil Corp. No. 1 Johnson, sec. 10-7-20w. T.D. 845 ft.; fsg.

Gauntt & Baker No. 1 Parks, NW NW SW sec. 29-7-20w. S.D. 720 ft.

Lincoln County

Wilcox O. & G. Co. No. 1 Evans, SW SW NW sec. 21-14-6. T.D. 3,170 ft.; S.O.&G.; shot; C.O.

Wilcox O. & G. Co. No. 1 Royer, SE SE NE sec. 18-14-6. T.D. 3,372 ft.; P.B. 3,240 ft.; waiting.

Logan County

Carter Oil Co. No. 1 Lydick, C E½ NW NE sec. 23-15-4w. Drlg. 6,162 ft.

Sinclair-Prairie No. 1 Crews, SW SW NE sec. 27-16-1e. Drlg. 4,125 ft.

Muskogee County

T. P. Clants No. 1 Jennings, NW NW NE sec. 8-13n-19. Drlg. 600 ft.

Heydrick No. 1 Paschall, NE SE NW sec. 22-13n-19. Drlg. 678 ft.

Midco Oil Corp. No. 1 Dunagan, SE SE NE sec. 31-11-19. T.D. 3,042 ft.; D.&A.

Murray County

Gilbreath & Dutton No. 1 Wolfe, C SE SW sec. 8-1-2. Drlg. 1,759 ft.

Okfuskee County

Alma Oil Co. No. 1 Martin, SW cor. sec. 4-12-7. T.D. 4,284 ft.

Burke-Greis Oil Co. No. 1 Capps, SE cor. sec. 7-13-7. T.D. 3,227 ft.; shot 2,818-48 ft.; 2,874 ft.; S.D. to D.D.

Okmulgee County

Bryan Pet. No. 1 Thompson, C SE NE NE sec. 8-15n-11. T.D. 3,005 ft.; P.B. 2,030 ft.; shot and swbd. 33 B.O. in 24 hrs.

Osage County

Chevalier-Simon No. 1 Osage, NW NW SW sec. 33-27-5. S.D. 2,385 ft.

Norbia Oil Co. No. 1 Osage, SE cor. sec. 18-25-7. Drlg. sh. 2,570 ft.

Wah Sha She Oil Co. No. 1 Osage, NE NE NW sec. 4-28n-9. Drlg. 1,000 ft.

Pawnee County

Darby No. 1-A Lillie, NW NW SW sec. 1-22-3. Drlg. 3,045 ft.

O. O. Owens et al No. 1 Riddle, C E½ E½ NW sec. 30-22-7. Drlg. 1,285 ft.

Payne County

R. L. Kemp et al No. 1 Rafferty, SE SE NE sec. 6-18-5. T.D. 3,666 ft.; H.F.O. U.R. at 3,240 ft.

Sun Oil Co. & Loffland Bros. No. 1 Scafe, SE SE NE sec. 12-18-1e. T.D. 4,968 ft.; D.&A.

Texas Co. No. 1 Logan, C W½ NW NW sec. 12-17-1e. T.D. 4,629 ft.

Pittsburg County

Supreme Oil Corp. No. 1 Hickey, NW SW NW sec. 4-2n-15. T.D. 503 ft.; S.D.; repairs.

Pontotoc County

Caloma Oil Corp. No. 1 Brents, SE NE SW sec. 4-1n-6. T.D. 1,574 ft.; S.D.; lost circ.

Cowley et al No. 1 McCormick, NW SW SW SE sec. 27-2n-4e. T.D. 330 ft.

Farmers Mutual Royalty Corp. No. 1 Waite, NE NE NW sec. 9-5-5. Drlg. 1,700 ft.

Jack Lynch et al No. 1-A Parker, SW SW SE sec. 17-4-8. T.D. 3,180 ft.

L. P. Sandback et al No. 1 Porter, NE SE NW sec. 28-4-7. T.D. 1,205 ft.; S.D.

Union Dev. Co. No. 1 Abbott, SW NW NE sec. 34-3-6. T.D. 3,320 ft.; S.D.

Pottawatomie County

Mid-Continent Pet. Corp. et al No. 1 Smith, NE SE SW sec. 31-7-4. T.D. 4,505 ft.; R.U.S.T.

Pure Oil Co. No. 1 Lack et al, SE SW NW sec. 3-6-5. T.D. 3,300 ft.

Shell Pet. Corp. No. 1 Boley, SE SE SW sec. 5-11-6. Drlg. 2,990 ft.

Seminole County

W. A. Delaney et al No. 1 Swan, SE SW SW sec. 18-6-6. Cmtg. csg. 2,671 ft.; O.I.H.; R.U.S.T.

Magnolia Oil Co. No. 1 Merrell, SW SE NE sec. 34-6-5. T.D. 2,250 ft.

W. B. Pine No. 1 Wright, SE SE NE sec. 16-6-6. P.B. 3,576 ft.; W.O.C.

Smith & Greer No. 1 Coker, NW NE NE sec. 25-7-5. S.D. 2,997 ft.

Summitt Drlg. Co. No. 1 Wass, SE NE NE sec. 30-8-7. T.D. 4,255 ft.; shot; C.O. with 800 ft. O.I.H.

H. V. Woodson and Marydun Oil Co. No 1 Gilliland, SE SW sec. 24-11-7. T.D. 4,522 ft.; nothing showing; D.&A.

Texas County

Hagey et al No. 1 Peck, C NE sec. 6-1n-13ecm. T.D. 2,895 ft.; to acdz.

Hardendorf & Kuhn No. 2 Wiggin, C NE sec. 2-2n-14ecm. T.D. 2,540 ft.; W. O.C.

Washita County

L. B. McWhirter No. 1 fee, NW SW SW sec. 34-8-19w. T.D. 2,147 ft.; S.D.

SOUTHERN OKLAHOMA

Atoka County

Amerada Pet. Corp. and Stanolind O. & G. Co. No. 1 Ridgway, NE cor. sec. 24-3s-9. Cg. 4,843 ft.

C. M. Sheldon and Gardner Pet. Co. No 1 Lee, NE NW SW sec. 2-4s-10e. Drlg. 2,830 ft.

Carter County

Texas Co. No. 1-B Cathey, SE NE NE sec. 6-5s-1w. T.D. 5,685 ft.; perf. to swb. through tbg.

Choctaw County

Dr. Hardy et al No. 1 fee, SE SE NW sec. 21-7s-15. Drlg. 310 ft.

Clyde Ross et al No. 1 Hardy, SE SE NW sec. 21-7s-15. Drlg. 310 ft.

Cotton County

Jim Turner et al No. 3 Collins, SE SE NE sec. 18-4s-10w. Loc.

Love County

Sinclair Prairie Oil Co. No. 1 Peabody, NE cor. sec. 35-6s-2w. T.D. 5,961 ft.; fsg.

Marshall County

E. W. Hughes Drlg. Co. et al No. 1 Vit-

titoe, C NE SE sec. 11-5s-4e. Drlg. L. 6,200 ft.

Stephens County

Coline Oil Co. No. 1 Johnson, C SW SE SE NE sec. 1-2n-8w. T.D. 10,000 ft.; 9,050 ft.; made several hd. flws., 37-grav. oil. S.I.O.

Helmerich & Payne No. 1 Mauersberger, C S½ SW SE sec. 29-2n-8w. T.D. 7,005 ft.; S.D.O.

B. F. Lundy et al No. 1 Oxford, NE NE SW sec. 26-1s-4w. Drlg. 2,512 ft.

Tillman County

Russell & Ray No. 1 Hasley, NW NE NW sec. 4-1s-19w. T.D. 2,754 ft.; D.&A.

Smith No. 2 Hammell, NE NW NW sec. 6-5s-15w. T.D. 2.000 ft.; S.D.

KANSAS

Week Ending April 30 (Descriptions are East unless marked otherwise)

Barton County

R. E. Day et al No. 1 Felts, SE SE NE sec. 14-16-12w. S.D. 1,875 ft.

Deep Rock Oil Co. No. 1 Drake, NW SE sec. 4-17-13w. T.D. 848 ft.; W.O.C.

Gear and Atlantic Ref. Co. No. 1 Sullivan, NE SE SW sec. 29-17-13w. T.D. 3,398 ft.; D.&A.

Kessler O. & G. No. 1 Bowman, SW NE sec. 22-20-16w. Drlg. 1,480 ft.

Murfin et al No. 1 Rexroot, NW SE sec. 14-17-13w. C.O. 3,045 ft.

Price et al No. 1 Wondra, NW NE sec. 10-17-13w. T.D. 3,343 ft.; P.B. 3,342 ft.; p. 85 B.F. in 16 hrs., 8% wtr.

Sinclair Prairie Oil Co. No. 1 Frederick, SW SW SE sec. 16-16-11w. Arb. 3,322 ft.; T.D. 3,346 ft.; set 5-in. csg. 3,322 ft.; acd.; swb. 60 B.O. and 78 B.W. in 11 hrs.

Butler County

T. S. Dustin No. 1 Miley, SE NW NE sec. 17-27-5e. C.O. 1,050 ft.

Saco Oil Co. et al No. 1 Pettit, SW NW SW sec. 21-28-6. Drlg. 3,120 ft.

Chase County

T. D. Duffy No. 1 Leedy, NE NW NW sec. 26-22-9e. C.O. 1,850 ft.

Cowley County

Bess & Gralapp et al No. 1 Hunt, CNL NE NW sec. 18-34-5e. T.D. 3,280 ft.; D.&A.

Palmer Oil Corp. No. 1 Houser, SE NW SW sec. 13-30-3e. Drlg. 2,340 ft.

Smith et al No. 1 Wilson, SE SW NW sec. 9-33-6. Drlg. 2,025 ft.

Earl Wakefield No. 1 White, NW NE sec. 4-33-4e. T.D. 3,220 ft.; bad hole.

Dickinson County

Fred Franks et al No. 1 Huffman, NW NW sec. 11-13-1e. T.D. 170 ft.; rng. csg.

Ellis County

Carter Oil Co. No. 1 Foster, SE NW sec. 1-15-16w. T.D. 3,449 ft.; (cor.); reset-ting 4½-in.

Duwe & Farris No. 1 Hadley, SE NE SE sec. 12-11-18w. Arb. L. 3,329-32 ft.; S.O.; W.O.C.

Ellsworth County

Cities Service et al No. 2 Schroeder "A," CNL SW sec. 29-17-9w. Drlg. 1,020 ft.

Ralph Wixson et al No. 1 Peterman, SW cor. sec. 28-17-10w. T.D. 3,306 ft.; P.B. 3,300 ft.; acd.; p. 167 B.O. and 62 B. W.; reacidized and p. 5 B.O. and 2½ B.W.P.H.

Finney County

Atlantic Ref. Co. No. 1 Nunn, C SE NE sec. 27-21-34w. Drlg. 3,157 ft.

Ford County

Sinclair Prairie Oil Co. No. 1 Young, CSL NE sec. 34-27-21w. Drlg. 4,600 ft.

Greenwood County

Stanolind Oil Co. No. 1 Denew, NW SE sec. 13-25-12w. Drlg. 3,216 ft.

C. C. Whitaker et al No. 1 Bressner, NW SE sec. 8-26-13e. T.D. 1,477 ft.; 1,000,000 ft. gas, est.

Jackson County

Haverback et al No. 1 Marble Bank, C NE NE sec. 26-9-14. T.D. 1,310 ft.; C.O.

Jewell County

Hollingsworth Bros. No. 1 Wolfe, NE SW SE sec. 14-4s-8w. S.D. 100 ft.

Kearny County

Tri-County Gas Co. No. 1 Campbell, NE SE NE sec. 19-25-35w. T.D. 2,730 ft.; P.B. 2,685 ft.; 9,000,000 ft. gas; comp.

Lane County

Phillips Pet. Co. No. 1 Kees, C SE SE sec. 3-19-30w. T.D. 4,911 ft.; lost circ

McPherson County

Darrah et al No. 1 Decker, SW SW SE sec. 12-21-2w. Arb. 3,557-61½ ft., T.D.; P.B. 2,980 ft.; drld. to 3,018 ft.; shot; 2,600,000 ft. gas.

Meade County

Barnett et al No. 1 Adams, NW SE sec. 22-34-30w. S.D. 69 ft.

Ness County

Schoeppel & Elmore No. 1 Moses, C SW NW sec. 10-18-25w. Drlg. 2,702 ft.

Trojan O. & G. Co. No. 1 Page Milling Co. SE SE NW sec. 36-18-26w. S.D. 3,270 ft.

Pratt County

Atlantic Ref. Co. No. 1 Rice, NW NE NW sec. 11-28-15w. Drlg. 3,995 ft.

Reno County

Carey et al No. 1 McPheeters, NE NW sec. 22-26-8w. Fsg. 3,940 ft.

McCole et al No. 1 Mathews, SW NW NW sec. 15-24-10w. Fsg. 3,895 ft.

Rice County

Marylyn Oil Co. et al No. 1 Vincent, NW NW NE sec. 5-21-10w. Drlg. 1,525 ft.

Price et al No. 1 Gemeinhardt, NE SE sec. 18-18-10w. T.D. 3,305 ft.; P.B. 3,298 ft.; pmpd. 15 B.O. and 25% wtr. daily.

Rooks County

Carter Oil Co. No. 1 Leist, SW cor. sec. 10-8-17w. T.D. 3,508 ft.; D.&A.

Graham et al No. 1 Fike, SW cor. sec. 9-9-17w. S.D. 3,384 ft.

Producers Oil Co. No. 1 Ham, SW SW NW sec. 25-7-19w. T.D. 1,000 ft.; C.O.

Russell County

Central Pet. Co. No. 1 Furthmeyer, SE sec. 22-14-15w. U.R. 2,430 ft.

Lauck & Moncrief No. 1 Miller, NE NW NW sec. 29-13-14w. T.D. 3,378 ft.; P.B. 3,090 ft.; drlg. to 3,080 ft.; 1,000 ft. W.I.H.; D.&A.

S. L. Parks No. 1 Gorham, SW SW NE sec. 19-15-15w, H.F.W. 3,347-52 ft., T. D.; P.B. 3,120 ft.; W.O.C.

Phillips Pet. Co. No. 1 Miller, C NW SW sec. 29-13-14w. Set 10-in. csg. 20 ft.; T.D. 532 ft.; W.O.C.

Smith & Unruh No. 1 Stielow, NW cor. sec. 32-11-14w. T.D. 2,552 ft.; S.D.

Sedgwick County

Frank Hudson et al No. 1 Fulton, NE SE sec. 35-28-1e. U.R. 1,785 ft.

Union O. & R. Co. et al No. 1 Howell, SW cor. sec. 6-29-1e. U.R. 2,843 ft.

Stafford County

Cardinal Oil Co. et al No. 1 Fischer, SW NW SW sec. 31-21-12w. T.D. 3,650 ft.; 2,700 ft. O.I.H. in 15 hrs.

Stanolind O. & G. Co. No. 1 Carlile, NE SE SW sec. 22-25-12w. Drlg. 4,013 ft.

Stanolind O. & G. Co. No. 2 Siefker, NE SE NE sec. 3-22-12w. Drlg. 2,370 ft.

Sumner County

Hapenny et al No. 1 Evers, SE SE NE sec. 27-31-2e. O.W.D.D.; S.D. 1,930 ft.

Murphy et al No. 1 Tate, SE NW sec. 31-32-2e. Drlg. 1,410 ft.

Saco Oil Co. et al No. 1 Phipps, SW SE NE sec. 24-30-1w. Drlg. 3,748 ft.

Woodson County

Cleveland Oil Co. et al No. 1 Fidelity, SE SE NE sec. 34-25-15. Drlg. 500 ft.

Hill & McClure No. 1 Kelley, NW SE SW sec. 22-26-14w. Drlg. 570 ft.

Kilby et al No. 1 Skellenger, NE SE sec. 23-23-14. Drlg. 625 ft.

Wad McGinnis No. 1 State Bank, NW NE NE sec. 14-26-15. S.D. 1,150 ft.

Prunty Prod. et al No. 1 Tipton, NW NE sec. 31-25-14. Set 6-in. 1,510 ft.; drlg. 1,620 ft.

Lonoke County

J. F. Russell No. 1 Gunter, sec. 17-5n-10w. Drlg. 570 ft.

Miller County—Rodessa

F. W. Burford No. 1 Mitchell, sec. 11-20-28. Drlg. 569 ft.

F. W. Burford No. 2-B Thomas, sec. 12-20-28. Drlg. rd. bds. 4,061 ft.

J. L. Caracas No. 1 Mitchell, SW cor. NW NW sec. 11-20-28. Drlg. rd. bds. 4,721 ft.

Gerhig Co. of Ark. No. 2-B Mitchell, sec. 11-20-28. Drlg. sh. 1,100 ft.

G. C. Grasty No. 2 Mitchell, sec. 3-20-28. Drlg. sh.&L. 4,388 ft.

John Kraker No. 1-C Mitchell, sec. 10-20-28. Drlg. ch. rk. 2,430 ft.

B. B. Orr No. 2 Mitchell, sec. 10-20-28. Set 13⅜-in. csg. 180 ft.

I. Roosth No. 1 Capps, sec. 10-20-28, Sat. L. 6,115-38 ft.; set 5½-in. csg. 6,100 ft.; T.D. 6,140 ft.

Texarkana Drlg. Co. No. 1 Capps, sec. 10-20-28. Drlg. rk. 275 ft.

Texas Canadian Oil Corp. No. 2 Thomas, NE cor. NW SE sec. 12-20-28. T.D. 6,203 ft.; reperf. 6,108-16 ft., 6,125-32 ft., and 6,146-53 ft.; swbd. approx. 25 bbls. oil; arng. acdz.

Mrs. S. O. Thompson No. 2 Greer, sec. 11-20-28. Sat. L. 6,125-53 ft.; set 7-in. csg. 6,125 ft.; T.D. 6,155 ft.; comp.; 516 B.P.D.; 40/64-in. ck.

Nevada County

Bruce E. Wallace No. 2 Haynie, SE cor. SE NE sec. 5-14-21. Sdy. sh. 1,194-1,204 ft.; tstd. mud, S.W. and oil 1,198-1,214 ft.; 30 min.: W.O.: T.D. 1,214 ft. set 6-in. csg. 1,198 ft.; swg.; to test.

Pike County

Bruce E. Wallace No. 1 Tilyeu, sec. 26-8s-24w. S.D. 330 ft.

Pulaski County

Coker Oil Corp. No. 1 Stone, sec. 36-3n-11w. R.U.

A. L. Kitselman, No. 2 A. L. Kitselman Jr., SE SE SW sec. 2-1s-13e. S.D. hd. rk. 2,750 ft.

Union County—Shuler

Alice Sydney Oil Co. No. 2 Powledge, sec. 7-18-17. Drlg. rd. and gr. sh. 5,808 ft.

Alice Sydney Oil Co. No. 3 Powledge, SW cor. SE SE sec. 7-18-17. Drlg. rd. and gr. sh. 5,583 ft.

E. M. Jones No. 3 Marine Oil Co., NW NW SE sec. 17-18-17. Jones sd. 7,605-37 ft.; T.D. 7,700 ft.; set 7-in. csg. 7,684 ft.

E. M. Jones et al No. 2-A Murphy, sec. 19-18-17. Drlg. rd. sdy. sh. 6,517 ft.

Lion Oil Ref. Co. No. 1 Marcus, sec. 18-18-17. Drlg. rd. and gry. sh. 4,988 ft.

Lion Oil Ref. Co. No. 3 Marine Oil Co., sec. 17-18-17. Drlg. rd. sdy. sh. 7,036 ft.

Lion Oil Ref. Co. No. 1 Mayfield, SE cor. Lot 3, Fract. NW¼ sec. 18-18-17 Top Jones sd. 7,520 ft.; top L. 7,690 ft.; T.D. 7,690 ft.; comp.; 837 B.P.D. on 10/64-in. ck.

Lion Oil Ref. Co. No. 2 Mayfield, Lot 2, sec. 18-18-17. Drlg. rd. sh. 3,864 ft.

Lion Oil Ref. Co. No. 3 Mayfield, sec. 18-18-17. R.U.

Lion Oil Ref. Co. No. 1 Edna Morgan, NE cor. Lot 5, NW sec. 18-18-17. Drlg. rd. and gry. sh. 5,864 ft.

Lion Oil Ref. Co. No. 2 Edna Morgan, sec. 18-18-17. Drlg. rd. and gry. sh. 5,452 ft.

Marine Oil Co. No. 5 fee, sec. 17-18-17. Drlg. rd. and gr. sh. 5,780 ft.

Marine Oil Co. No. 6 fee, sec. 17-18-17. Drlg. rd. and gry. sh. 5,480 ft.

Phillips Pet. Co. No. 3 Justiss, Lot 6, sec. 18-18-17. Drlg. sdy. sh. 7,053 ft.

Phillips Pet. Co. No. 4 Justiss, Lot 6, sec. 18-18-17. Top Jones sd. 7,512 ft.; top L. 7,608 ft.; T.D. 7,700 ft.; set 7-in. csg. 7,673 ft.

Phillips Pet. Co. No. 2 Marine, NE cor. NW NE sec. 20-18-17. Set 7-in. csg. 7,626 ft.

Phillips Pet. Co. No. 3 Marine Oil Co., sec. 20-18-17. Drlg. rd. sdy. sh. 6,357 ft.

Phillips Pet. Co. No. 4 Marine Oil Co., sec. 20-18-17. Drlg. rd. and gry. sh. strks. sd. 5,842 ft.

Phillips Pet. Co. No. 5 Marine Oil Co., sec. 20-18-12. Drlg. rd. sh.&sd. 5,110 ft.

Phillips Pet. Co. No. 3 Marks, C Lot 2, SW sec. 18-18-17. Drlg. 2,380 ft.

Texas Canadian Oil Corp. No. 1 Powledge, C NE NW NW sec. 21-18-17 Top Jones sd. 7,582 ft.; top L. 7,665 ft.; set 7-in. csg. 7,665 ft.; T.D. 7,685 ft.

Union County—Other

Ark. Southern Oil Corp. No. 3-A Simmons, sec. 15-18-13. R.U.

J. R. Lockhart No. 1 Raulston, sec. 12-17-14. R.U.; W.O.

Joe Modisette et al No. 1 Union Sawmill Co., sec. 8-18-12. R.U.

W. D. Wingfield, Tr. No. 2 Kidd Est., SE cor. NW SW sec. 15-18-13. Sd. S.D. 2,257-2,300 ft.; set 6-in. csg. 2,250 ft.; T.D. 2,300 ft.; W.O.S.R.

LOUISIANA

NORTH LOUISIANA PROVEN

Caddo—Rodessa

Gulf Oil Corp. No. 2 Allison, sec. 3-23-16. Set 7-in. csg. 5,904 ft.; T.D. 5,998 ft.; comp.; 316 B.P.D.; 22/64-in. ck.

J. S. Rushing No. 1 Gibson, sec. 10-23-16. Sat. L. 5,909-20 ft.; set 7-in. csg. 5,912 ft.; T.D. 5,965 ft.

Shell Pet. Corp. No. 5-B U. S. Govt., sec. 3-23-16. Set 5-in. csg. 6,008 ft.; T.D. 6,010 ft.; perf. and tstg.

N. LOUISIANA WILDCATS

Bienville Parish

Gulf Ref. Co. No. 1 Goodpine, sec. 25-14-8. Drlg. hd. sd.&sh. 9,531 ft.

Producers O. & G. Co. No. 1 Locke, NE cor. sec. 9-15-10. O.W.W.O.; old T.D. 2,960 ft.; rmd. to 800 ft.; S.G.; hole cleaned out; sat. L. 2,952-53 ft.; set 8⅝-in. csg. 2,947 ft.; T.D. 2,962 ft.

Bossier Parish

Premier Inv. Co. No. 1 McDade, SE SW NE sec. 28-19-11. Drlg. 2,080 ft.

Sloan, Lloyd et al No. 1 Sherrill, sec. 12-19-12. Drlg. sh. 753 ft.

Triangle Drlg. Co. No. 4-A Herold, NE SW sec. 13-17-12. Drlg. sh. 2,330 ft.

Union Prod. Co. No. 2 Thigpen-Herold, sec. 13-17-12. T.D. 3,030 ft.; arng. D. S.T.

Caddo Parish

Ardsell Oil Co. and H. W. Russell No. 2 Muslow, sec. 26-21-16. O.W.W.O.; comp.; 5 B.P.D.; open tbg.; T.D. 2,246 ft.

Carroll et al No. 1 Hart, NW sec. 26-21-16. R.U.

J. P. Driscoll No. 2 Sattelite, sec. 10-20-15. Set 6-in. csg. 2,175 ft.; T.D. 2,189 ft.

W. D. Flynn No. 4 Natalie, SE cor. sec. 10-21-16. Set 7-in. at 998 ft.; W.O.; T.D. 1,027 ft.

Hancock & Ulman No. 3 Helpman, sec. 16-21-16. T.D. 1,014 ft.; comp.; pmpg 25 B.P.D.

J. T. Humphrey No. 1 Caddo Levy Bd., sec. 26-21-16. S.D. 1,800 ft.

R. E. Kennedy No. 2 Wells, sec. 10-21-15. Set 5⅜-in. csg. 1,580 ft.; T.D. 1,604 ft.; comp.; 500 B.P.D.; ⅜-in. ck.

Magnolia Pet. Co. No. 25 Dillon Hrs., sec. 23-21-15. Drlg. sh. 1,100 ft.

Petroleum Heat & Power Co. No. 1 Wemple, NW cor. sec. 14-20-15. Set 6-in. csg. 2,185 ft.; S.D. 2,407 ft.

Simplex Oil Co. No. 6 Natalie, sec. 10-20-15. T.D. 2,196 ft.; comp.; flwg. 75 B.P.D.; set 6-in. csg. at 2,190 ft.

G. R. Stevens No. 3 Hart, sec. 22-21-16. Set 6-in. csg. 997 ft.; W.O.S.R. 1,003 ft.

Tippett Oil Corp. No. 1 Lewis, sec. 27-20-16. Set 6⅝-in. csg. 1,355 ft.; T.D. 1,400 ft.

Triple M Oil Co. No. 1 Boisseau, sec. 34-21-16. S.D.; W.O. 1,888 ft.

Caldwell Parish

E. T. Oakes et al No. 1 Kyles, sec. 18-11-3e. R.U.

Claiborne Parish

Atlantic Ref. Co. No. 3-B Bean, sec. 32-21-4. Set 10¾-in. csg. 778 ft.

Harry Fetlades No. 3 King, sec. 11-20-5. Set 10¾-in. csg.

Harry Fetlades No. 4 King, sec. 10-20-5. Set 10¾-in. csg. 726 ft.

Gulf Oil Corp. No. 3 Patton, sec. 11-20-5. Drlg. 425 ft.

Hollifield & McFarland No. 4 Patton Est., sec. 2-20-5. Set 7-in. csg. 5,248 ft.; T.D. 5,258 ft.; comp.; 50 B.P.H.; open tbg.; T.P. 100 lbs.

T. L. James No. 3 Fowler, C NW SE sec. 32-21-4. Drlg. sh.&L. 5,000 ft.

Love Pet. Co. No. 1 English, sec. 29-21-4. Drlg. sh. 600 ft.

C. H. Lyon et al No. 1-A Lloyd, sec. 2-20-5. Drlg. anhy. 3,993 ft.

Magnolia Pet. Co. No. 1 Lloyd, NW SE sec. 2-20-5. Top sat. L. 5,252 ft.; set 7-in. csg. 5,254 ft.

C. R. Schuster No. 1 Kilgore, sec. 28-21-15. R.U.

Scouts Oil Corp. No. 1 Fowler, sec. 28-21-4. Set 10¾-in. csg. 856 ft.

Sells Pet. Co. No. 1-A Patton, sec. 11-20-5. Drlg. sh. 3,680 ft.

Sklar Oil Corp. No. 1 Kilgore, sec. 11-20-5. Drlg. sh. 3,825 ft.

Texas Canadian Oil Co. No. 1 Fowler, sec. 32-21-4. R.U.

Texas Co. No. 1 Tippett, sec. 33-21-4. Drlg. L.&sh. 5,072 ft.

W. A. Thorpe No. 1 Fowler, sec. 33-21-4. Drlg. sh. 2,205 ft.

Union Prod. Co. No. 2 Brownfield, sec. 5-19-5. T.D. 10,661 ft.; set 7-in. csg. 10,561 ft.

Union Prod. Co. No. 1 Coleman, sec. 43-7-9e. Drlg. sh.&L. 5,363 ft.

G. H. Vaughn et al No. 2-B Eppinger, sec. 30-21-4. Cg. 5,087 ft.

Weaver Oil Corp. No. 2 Edmonds, sec. 16-20-5. Drlg. sh.&L. 5,224 ft.

Concordia Parish

Morrison & Co. No. 1 Winston, sec. 43-7-9e. Set 10-in. csg. 452 ft.

De Soto Parish

S. S. Alexander No. 1 Stoll, NE cor. sec. 5-12-16. O.W.W.O.; old T.D. 6,002 ft.; set short string 5½-in. csg. 5,479 ft reperf. 5,180-90 ft.; S.W.; perf. 5,315-5,440 ft.; S.W.; S.D.; W.O.

Hunter Co. No. 1 Parker, sec. 26-12-16. Set 9⅝-in. csg. 1,380 ft.; cg. 2,867 ft.

La. Seaboard Oil Ref. Co. No. 1 Law-

ARKANSAS

Bradley County

Phillips Pet. Co. No. 1 Marsden, sec. 9-16w-11s. Top Nacatoch 2,581 ft.; drlg. sd.&sh. 3,656 ft.

Columbia County

Standard Oil Co. of La. No. 2 Crone, NW cor. SE SW sec. 8-16-22. Drlg. L. 5,495 ft.

Standard Oil Co. of La. No. 1 W. P. Phillips et al, 660 ft. N and W. C sec 15-17-19. D.S.T. 6,307-15 ft.; rec. 42 stands oil and 3 stands S.W.; flwd. oil; drlg. sd.&sh. 7,237 ft.

Standard Oil Co. of La. No. 1 Waters et al, 660 ft. SE cor. SE SE sec. 7-16-22. Drlg. sh. and strks. sd. 6,575 ft.

Desha County

Columbian Fuel Corp. No. 1 Cross, SW cor. sec. 34-8s-3w. T.D. 4,915 ft.; D. &A.

Hempstead County

H. D. Easton et al No. 1 LaGrone, sec. 5-12-26. S.D. 2,880 ft.

Little River County

Joe G. Strahan et al No. 2 Dierks Lbr. Co. S.D. 2,459 ft.

rence, sec. 36-12-14. Set 8¼-in. csg. 2,031 ft.; tstd. dry; small S.O.; arng. to D.D.
Paul Miller No. 1 Jai Drlg. Co., C sec. 7-11-11. D.S.T. 2,800 ft.; rec. S.W.; S.D.; rep.; T.D. 2,900 ft.; abd.
Pet. Heat & Power Co. No. 1 DeSoto Corp., SE cor. SW NW sec. 7-11-11. Missed sd.; T.D. sh. 2,868 ft.; set whipstock 2,140 ft.; cd. to 2,870 ft.; D.&A.
Pet. Heat & Power Co. No. 1-B Kavanaugh, sec. 12-11-12. S.D. 1,654 ft.; rep. rig.
Pet. Heat & Power Co. No. 1 Matthews, sec. 29-12-11. Old T.D. 4,003 ft.; P.B. 3,950 ft.
Pet. Heat & Power No. 1 Williams, W. R., NW NE sec. 13-11-12. (Cor.); D.S. T. 2,800-18 ft.; S.G.; 7-in. csg. set 2,800 ft.; tstg. 2,827 ft.; W.O.; T.D. 2,827 ft.; tstd. S.G.; arng. D.D. 2,827 ft.
Texas Co. No. 2 White, SW NE sec. 24-12-12. Set 4½-in. csg. 835 ft.; tstd. dry; S.G.; rng. sd. pmp.; T.D. 890 ft.
Texas Co. No. 1 Thigpen, sec. 29-12-11. R.U.

Franklin Parish

Southern Star Pet. Co. No. 3 Grayson, sec. 36-12-6e. R.U.

Grant Parish

K-M Pet. Co. No. 1 Holmes, sec. 20-9-1e. Set 10-in. csg. 60 ft.
C. L. Thompson No. 1 McNeely Est., NE cor. sec. 16-6-3w. S.D. 700 ft.

La Salle Parish

Alexander & Jarvis No. 1 Tremont, sec. 2-9-1e. Set 6-in. csg. 1,490 ft.; T.D. 1,493 ft.
Cupples et al No. 1 King, sec. 25-10-1e. Set 5⅛-in. csg. 1,540 ft.; S.D. 1,549 ft.

Lincoln Parish

Lyons & Neely No. 1 Brazzill, C SE NW sec. 17-20-4. Drlg. sh.&L. 5,050 ft.
Magnolia Pet. Co. No. 2 Patton, sec. 7-20-4. Set 7-in. csg. 5,380 ft.; comp.; 207 B.P.D.; T.D. 5,399 ft.
Magnolia Pet. Co. No. 3 Pollock, C N½ SW SE sec. 5-20-4. Swbg. to test sat. L. 5,301-05 ft.; 7-in. csg. 5,301 ft.; T.D. 5,322 ft.

Morehouse Parish

W. J. Furlong No. 1 Clark, sec. 10-20-7e. Set 9⅝-in. csg. 2,805 ft.; top Big L. 6,207 ft.; S.D. hd. L. 7,023 ft.

Natchitoches Parish

W. P. Ryan et al No. 1 Lambert, sec. 4-8-9. Drlg. sh. 2,663 ft.
J. J. Watson No. 1 Sabine, sec. 12-7-13. R.U.

Red River Parish

Glassell & Whitehurst No. 1 LeLong, NE NW NE sec. 25-12-11. S.D. 2,874 ft.
Yandell Rogers No. 5 Gaspair, SE SW sec 27-13-11. Set 5⅛-in. csg. 2,453 ft.; T.D. 2,474 ft.; W.O.S.R.

Sabine Parish

H. N. Morris No. 1 Irving & Bishop, C NW NW sec. 18-7-12. Drlg. sh. 2,265 ft.
Plymouth Oil Corp. No. 1 Kezerle, sec. 3-7-12. Drlg. 2,410 ft.
W. L. Posey No. 1 Ramirez, C NW NW sec. 12-7-13. Drlg. 2,600 ft.
Republic Gas Co. No. 1 Whitney Corp., sec. 8-9-13. Drlg. hd. sd. 8,720 ft.
Royal O. & G. Co. No. 3-A Frost Lbr. Co., C NE SE sec. 19-9-13. Set 7-in. csg. 1,540 ft.; T.D. 1,961 ft.; tstg.
Sutton-Zwolle Oil Co. No. 1 Sabine Lbr. Co., SE cor. NW NE sec. 23-7n-14w. S.D.; cd. bl. sh. 3,875 ft.
Lee Whitehurst No. 6 Frost Lbr. Co., sec. 29-9-13. Set 10-in. csg. at 61 ft.

Tensas Parish

H. V. Schumacker No. 4 Mount Plantation, sec. 39-11-12e. S.D. 1,100 ft.

Union Parish

Standard Oil Co. of La. No. 1 Frost Lbr., sec. 14-21-1e. Drlg. rd. and gry. sh. 9,104 ft.

Webster Parish

Fohs Oil Co. No. 1 Crichton, sec. 33-21-10. Set 9⅝-in. csg. 6,113 ft.; T.D. 6,125 ft.
Hunt Oil Co. No. 6 Babb, C NE SW sec. 14-21-10. Drlg. L.&sh. 7,464 ft.
Hunt Oil Co. No. 7 Babb, C NW SE sec. 14-21-10. Drlg. sh.&anhy. 4,634 ft.
Hunt Oil Co. No. 9 Davis, sec. 14-21-10. Set 13⅜-in. csg. 680 ft.
Hunt Oil Co. No. 3 Webb, C NW SW sec. 13-21-10. Drlg. sh.&anhy. 4,174 ft.
Magnolia Pet. Co. No. 1 Coyle-Tiner, C sec. 21-21-10. Top Bodcaw 8,522 ft.; rng. 7-in. at T.D. 8,549 ft.
Magnolia Pet. Co. No. 1 Robbins Unit, sec. 21-21-10. R.U.
Magnolia Pet. Co. No. 1 Sexton Unit, NW SE sec. 32-23-9. Cd. Bodcaw sd.; no show; cd. sd. 8,293-8,310 ft.; gas odor; slight show gas and dist.; cg. hd. sdy. L. 8,599 ft.; ran Schlumberger 8,521 ft.; cd. sd. 8,899-8,906 ft.; gas odor; sd. at 9,007 ft.; dist. odor; drlg. bl. sh.& sd. 9,602 ft.
Midstates Oil Corp. No. 1 Welori Lbr. Co., C NW NW sec. 3-20-10. Top Tr. Pk. 6,029 ft.; no Holloway sd.; set 9⅝-in. csg. 6,121 ft.; T.D. 6,380 ft.
Morgan et al No. 1-A Hope, C NW NW sec. 25-21-10. Drlg. rd. bds.&sd. 6,995 ft.
North American Oil Consol. Co. No. 2 Stewart, C NE NE sec. 32-21-10. Drlg. L.&sh. 5,797 ft.
Ohio Oil Co. No. 3 Bodcaw, Acct. 4, sec. 28-21-10. Drlg. sd.&sh. 7,106 ft.
Ohio Oil Co. No. 49 Bodcaw (Acct. 3), C NW NW sec. 34-21-10. Set 13⅜-in. csg. 808 ft.; Bodcaw sd. 8,156-8,204 ft.; 7-in. csg. 8,162 ft.; T.D. 8,225 ft.
Ohio Oil Co. No. 50 Bodcaw, Acct. 3, sec. 34-21-10. Drlg. sh. 2,540 ft.
Ohio Oil Co. No. 1 Crutsinger, NE cor. sec. 35-2-10. Drlg. sh. (cor.) 8,062 ft.
Ohio Oil Co. No. 1 Gray, NW cor. SE NW sec. 28-21-10. Drlg. sh.&sd. 6,960 ft.
Ohio Oil Co. No. 24 Gray, NE cor. sec. 35-21-10. Drlg. sh.&sd. 6,950 ft.
Ohio Oil Co. No. 1 A. H. Gray, Acct. 3, sec. 26-21-10. Drlg. sh.&L. 2,001 ft.
Ohio Oil Co. No. 1 Jackson, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,600 ft.; T.D. 5,766 ft.
Ohio Oil Co. No. 1 Sandlin, sec. 27-21-10. No Holloway sd.; set 9⅝-in. csg. 5,574 ft.; T.D. 5,755 ft.
Oliphant No. 3 Banks, sec. 34-21-10. Top Tr. Pk. 5,797 ft.; drlg. sh. 7,540 ft.
A. G. Oliphant No. 2 Hodges, C NW SE sec. 34-21-10. Drlg. L.&sh. 5,552 ft.
A. G. Oliphant No. 1 Stewart, sec. 33-21-10. Holloway sd.; no show; drlg. sdy. sh. 7,774 ft.
Stanolind O. & G. Co. No. 1 Pardee Co., SW NE sec. 36-21-10. Drlg. sd.&sh. 7,750 ft.
Union Prod. Co. No. 1 Josey, sec. 27-21-10. Drlg. sh. 2,032 ft.
Union Prod. Co. No. 1 Stewart, SE cor. SE sec. 28-21-10. Bodcaw sd. 8,269-8,319 ft.; set 7-in. csg. 8,270 ft.; T.D. 8,325 ft.; comp.; 370 B.P.D. dist. on ¼-in. ck.

SOUTH LOUISIANA FIELDS

Abbeville—Vermilion Parish

Continental Oil Co. No. 1 Franciol, sec. 67-12s-3e. R.U.
Continental Oil Co. No. 1 Hebert, sec. 67-12s-3e. 10¾-in. csg. 1,510 ft.; T.D. 7,448 ft.; D.S. stk.; fsg.; P.B. 7,301 ft.; to sdtrk.; cg. sdy. sh. 7,906 ft.
Continental Oil Co. No. 1 Motty, sec. 67-12s-3e. Drlg. sh. 7,709 ft.

Baton Rouge—East Baton Rouge Parish

Wm. Helis No. 3 La. State, sec. 65-7s-1w. Drlg. sh.&L. 6,066 ft.

Bay St. Elaine—Terrebonne Parish

F. J. LeBlanc No. 2 Wurzlow, sec. 17-22s-18e. S.D. 816 ft.
Texas Co. No. 16 State, sec. 12-22s-17e. Drlg. salt 6,713 ft.

Bayou Blue—Iberville Parish

Humble O. & R. Co. No. 6 Wilbert Sons Lbr. Co., sec. 66-9s-11e. T.D. 6,991 ft.; 7-in. csg. 6,982 ft.; perf. csg. 6,937-47 ft.; made sqze. job.

Bayou Cocotris—Terrebonne Parish

Shell Pet. Corp. No. 5-B Realty Co. T.D. 9,498 ft.; 7-in. csg. 9,475 ft.; W.O.C.

Bayou De Allemands—St. Charles Parish

Amerada Pet. Corp. No. 1 Gheens Realty Co., sec. 56-15s-20e. T.D. 7,010 ft.; P.B. to 6,351 ft.; D.S. stk. at 6,451 ft. fsg.
Amerada Pet. Corp. No. 4 State, sec. 13-15s-20e. 13⅜-in. csg. 1,976 ft.; drlg. sh.&shls. 4,780 ft.

Big Lake—Cameron Parish

Union Sulphur Co. No. 2 Miami Corp., sec. 19-12s-8w. T.D. 9,439 ft.; P.B. to 6,500 ft.; W.O.C.

Black Bayou—Calcasieu Parish

Shell Pet. Corp. No. 41 Watkins, sec. 17-12s-12w. T.D. 5,199 ft.; S.D.

Caillou Island—Terrebonne Parish

Texas Co. No. 1 L.L.&E., sec. 18-23s-20e. T.D. 5,310 ft.; P.B. and sdtrkd.; T.D. 5,099 ft.; 7⅝-in. csg. 5,069 ft.; drlg. plug.

Cameron Meadows—Cameron

Burton-Sutton Oil Co. No. 23 School Ld., sec. 16-14s-13w. T.D. 5,786 ft.; 7-in. csg. 5,323 ft.
Burton-Sutton Oil Co. No. 24 School Ld., sec. 16-14s-13w. Drk.
Burton-Sutton Oil Co. No. 25 School Ld., sec. 16-14s-13w. Drlg. sh. 50 ft.
Magnolia Pet. Co. No. 22 Cameron Meadows, sec. 21-14s-13w. T.D. 4,242 ft.; 9⅝-in. csg. 4,242 ft.; perf. csg. 4,221-30 ft.

Cheneyville—Rapides Parish

Amerada Pet. Corp. No. 5 Well Ld. Co., sec. 53-1s-2e. R.U.
Texas Co. No. 3 Well Ld. Co., sec. 53-1s-2e. Drlg. sdy. sh. 4,715 ft.

Charenton—St. Mary Parish

Commerce Oil Co. No. 1 Dalph Parro, sec. 31-13s-10e. Cg. sdy. sh. 5,585 ft.
Pan American Prod. Co. No. 5 Laws Realty Co., sec. 25-13s-9e. R.U.
Pan American Prod. Co. No. 3 South Coast Corp., sec. 30-18s-10e. T.D. 7,833 ft.; P.B. 7,228 ft.; sdtrkd.; T.D. 8,446 ft.; P.B. 6,117 ft.; sdtrkd.; drlg. sh. 6,965 ft.
Pan American Prod. Co. No. 5 Veeder, sec. 11-13s-9e. Drlg. sh. 330 ft.

Choctaw—Iberville Parish

La. Crusader Oil Co. No. 2 Schwing, sec. 29-8s-11e. Drlg. sd.&L. 6,656 ft.

Darrow—Ascension Parish

Darrow Oil Co. No. 1 Dennis, sec. 68-10s-2e. T.D. 2,150 ft.; S.D.
Humble O. & R. Co. No. 17 Community, sec. 33-10s-2e. T.D. 6,584 ft.; perf. csg. 6,064 ft.; made sqz. job; drlg. out cmt. to 6,616 ft.; perf. csg. 6,587-97 ft.; made sqze. job.
Humble O. & R. Co. No. 18 Community, sec. 30-10s-2e. R.U.
Kiva Oil Co. No. 1 Duplessis, sec. 69-10s-2w. S.D. 2,523 ft.

Dog Lake—Terrebonne Parish

Texas Co. No. 21 State, sec. 5-22s-16e. T.D. 7,174 ft.; P.B. 5,490 ft.; sdtrkd.; drlg. sh. 6,512 ft.

Four Isle—Terrebonne Parish

Texas Co. No. 19 State-Lake, sec. 17-23s-18e. Drlg. sh.&L. 5,648 ft.

Fausse Point—Iberia Parish

Texas Co. No. 4 State, sec. 35-11s-8e, 18⅝-in. csg. 90 ft.; top sd. 7,912 ft.; top salt 6,595 ft.; T.D. 9,246 ft.; 7⅝-in. csg. 9,236 ft.

Garden Island—Plaquemines Parish

Texas Co. No. 27 State, sec. 38-23s-33e. Drlg. sd. rk. 5,107 ft.

Hackberry—Cameron Parish

W. T. Burton No. 2 Kenedy, sec. 22-12s-10w. T.D. 3,231 ft.; 7-in. csg. 3,207 ft. I.P. 384 B.P.D.; ¾-in. ck.
W. T. Burton No. 1 F. Lacy, sec. 22-12s-10w. Drk.
W. T. Burton No. 3 Lewis, sec. 22-12s-10w. R.U.
John Merrick No. 1 R. Vincent, sec. 28-12s-10w. R.U.
Stanolind O. & G. Co. No. 8 Carter & Sweeney, sec. 22-12s-10w. R.U.
Stanolind O. & G. Co. No. 10 Carter & Sweeney, sec. 22-12s-10w. R.U.; (cor.).
Stanolind O. & G. Co. No. 54 State-Kelso, sec. 16-12s-10w. T.D. 5,825 ft.; P.B. 4,000 ft.; T.D. 5,921 ft.; abd.
Stanolind O. & G. Co. No. 55 State-Kelso Bayou, sec. 16-12s-10w. Cg. sd.&sh. 3,152 ft.
Superior Oil Co. No. 1 Benson-Vincent, sec. 30-12s-10w. T.D. 6,755 ft.; heaving sh.
Texas Co. No. 24-B State, sec. 12s-9w. T.D. 8,052 ft.; blew out; stk. D.S.; fsg.
Union Sulphur Co. No. 1 Doiron, sec. 37-12s-10w. T.D. 4,888 ft.; 7-in. csg. 4,876 ft.; heaving sh. 5,940 ft.; P.B. 3,572 ft.; sdtrkg. at 3,531 ft.; drlg. sh. 5,511 ft.

Horseshoe Bayou—St. Mary Parish

Texas Co. No. 1 St. Mary Parish Ld. Co., sec. 37-17s-9e. 13⅜-in. csg. 1,837 ft.; cg. sh.&L. 10,752 ft.; cd. sd.; oil odor 10,655-95 ft.; T.D. 11,067 ft.; 7⅝-in. csg. 11,062 ft.; drlg. out cmt.

Jeanerette—St. Mary Parish

Herton Oil Co. No. 2 Carter, sec. 38-13s-9e. T.D. 9,939 ft.; 7-in. csg. 9,937 ft.; T.D. 10,476 ft.; well tried to blow out; P.B. and sdtrkd.; drld. to 10,482 ft.; P.B. 9,335 ft.; perf. csg. 8,406-16 ft.; flwd. S.W.; abd.
Herton Oil Co. No. 1-A Roane Sugar Co., sec. 38-13s-9e. Drlg. sdy. L. 7,753 ft.

Jennings—Acadia Parish

F. W. Bennett No. 2 Brethern, sec. 41-9s-2w. Drlg. sd.&sh. 5,087 ft.
H. Fotiades No. 2 Washington Opelousas, sec. 41-9s-2w. 16-in. csg. 106 ft.; T.D. 6,659 ft.; 7-in. csg. 6,659 ft.
Frio Oil Co. No. 1 Gulf fee, sec. 45-9s-2w. Drk.
Frio Oil Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. R.U.R.
Fred I. Getty No. 1 Lyons Oil Corp., sec. 46-9s-2w. 6⅝-in. csg. 1,580 ft.; T.D. 2,026 ft.; I.P. 250 bbls. fluid; pmpg. 10% b.s.&w.
Gulf Ref. Co. No. 39 Arnaudit, sec. 47-9s-2w. T.D. 4,840 ft.; P.B. 2,585 ft.; T.D. 4,586 ft.; 9⅝-in. csg. 4,578 ft.; cg. sdy. sh. 7,062 ft.
L. & L. Oil Co. No. 1 Syndicate Clement, sec. 46-9s-2w. T.D. 1,814 ft.; 6⅝-in. csg. 1,590 ft.; drlg. gbo. 2,062 ft.
T. G. Markley No. 1 Gulf Ld., sec. 45-9s-2w. Drlg. sh. 1,402 ft.
Pet. Heat & Power Co. No. 1 Iowa-Jennings, sec. 45-9s-2w. S.D. 3,505 ft.
Stanolind O. & G. Co. No. 19 Houssiere-Latreille, sec. 47-9s-2w. T.D. 6,448 ft.; P.B. 6,135 ft. to strtn. hole; T.D. 6,979 ft.; P.B. 6,700 ft.; P.B. and sdtrkg. 7,509 ft.; drlg. S.W. sd. 7,917 ft.
Superior Oil Co. No. 2 Julis Clement, sec. 46-9s-2w. T.D. 6,829 ft.; 7-in. csg. 6,793 ft.
Superior Oil Co. No. 9 Leckelt, sec. 42-9s-2w. T.D. 7,281 ft.; sdtrkd.; drlg. sh. &sd. 7,272 ft.
Superior Oil Co. No. 10 Leckelt, sec. 43-9s-2w. Drlg. sd. 4,441 ft.
Superior Oil Co. No. 12 Leckelt, sec. 42-9s-2w. Drlg. sh.&L. 6,855 ft.
Superior Oil Co. No. 13 Leckelt, sec. 42-9s-2w. R.U.
Superior Oil Co. No. 14 Leckelt, sec. 42-9s-2w. Drlg. sh. 1,490 ft.
Victor Weisse No. 1 Clement, sec. 46-9s-2w. T.D. 3,247 ft.; 6⅝-in. csg. 3,032 ft.

Lafitte—Jefferson Parish

Texas Co. No. 10 Lafitte, sec. 17-17s-24e. Drlg. sh.&L. 9,406 ft.
Texas Co. No. 1-B Madison, sec. 19-17s-24e. Drlg. sh.&L. 8,141 ft.
Texas Co. No. 3 Marrero Ld. Co., sec. 29-17s-24e. R.U.
Texas Co. No. 9 Rigolet-Cooperation Fur Co., sec. 29-17s-24e. Cd. oil sd. 10,106-11 ft.; T.D. 10,214 ft.; D.S. stk at 8,034 ft.

Lake Barre—Terrebonne Parish

Texas Co. No. 42 State-Lake, sec. 40-21s-19e. Drlg. sh.&L. 4,487 ft.

Lake Long—Lafourche Parish

Fohs Oil Co. No. 4 State, sec. 64-17s-19e. 10¾-in. csg. 2,707 ft.; drlg. sh. 9,701 ft.

Leesville—Lafourche Parish

Texas Co. No. 68 L.L.&E., sec. 27-21s-22e. T.D. 5,139 ft.; sdtrkd.; drlg. sdy. L. 5,633 ft.

Lirette—Terrebonne Parish

Humble O. & R. Co. No. 1 Wurzlow, sec. 32-19s-19e. Drlg. sh. 8,190 ft.
Union Prod. Co. No. 1 Fundenburk, Unit 1, sec. 50-19s-19e. Drlg. sh. 8,605 ft.

Lockport—Calcasieu Parish

Continental Oil Co. No. 1 J. H. Moss, sec. 8-10s-9w. R.U.

New Iberia—Iberia Parish

Wm. Helis No. 10 Bernard, sec. 54-12s-7e. R.U.
Wm. Helis No. 5 Bolivar, sec. 56-12s-7e. T.D. 4,337 ft.; salt; P.B. and sdtrkd.; T.D. 3,594 ft.; 7-in. csg. 3,100 ft.; made sqz. job 3,070-60 ft.; drlg. out cmt.
Wm. Helis No. 4 Schwing, sec. 56-12s-7e. T.D. 4,216 ft.; P.B.; sdtrkd.; T.D. 3,627 ft.; salt; S.D.; abd.
Wm. Helis No. 5 Schwing, sec. 56-12s-7e. Drlg. sd. 3,442 ft.
Texas Co. No. 4 Bryant, sec. 25-12s-7e. Cg. oil sd. 3,902 ft.
Texas Co. No. 2 Burke, sec. 56-12s-7e. R.U.
Texas Co. No. 5 Duhe, sec. 26-12s-7e. T.D. 5,066 ft.; 7⅝-in. csg. 4,949 ft.
Texas Co. No. 11-B Hanzen, sec. 54-12s-7e. Drlg. L. and pyrites 5,561 ft.

North Crowley—Acadia Parish

Humble O. & R. Co. No. 1 R. C. Davis, sec. 45-8s-1e. R.U.
Humble O. & R. Co. No. 2 Habetz, sec. 45-8s-1e. Drk.
Humble O. & R. Co. No. 1 Smith, sec. 44-8s-1e. 7-in. csg. 8,287 ft.; drlg. sd. 8,895 ft.
Humble O. & R. Co. No. 1 Traham, sec. 3-9s-1e. 7-in. csg. 9,771 ft.; drlg. sh. 9,990 ft.

Port Barre—St. Landry Parish

Pan American Prod. Co. No. 5 Cormier, sec. 4-6s-5e. T.D. 4,821 ft.; 7-in. csg. 4,778 ft.; I.P. 725 B.P.D.; ¼-in. ck.
Texas Co. No. 22 Botney Bay Lbr. Co., sec. 4-6s-5e. T.D. 3,569 ft.; P.B. 3,434 ft.; set csg. 3,434 ft.; perf. csg. 3,370-3,400 ft.; tstg.

Quarantine Bay—Plaquemines Parish

Gulf Ref. Co. No. 4 State, sec. 17-19s-17e. T.D. 5,700 ft.; 9⅝-in. csg. 5,560 ft. cd. sd., oil odor 7,853-8,227 ft.; T.D. 8,305 ft.; rmg.; D.S.T. 8,116-8,227 ft. tstd. 540 ft. oily mud, 60 ft. oil, 640 ft.; cd. sd., oil odor, 8,312-21 ft.; T.D. 8,327 ft.; D.S.T. tstd. 3,420 ft. S.W.; drlg. sdy. sh. 8,512 ft.

Raceland—Lafourche Parish

Amerada Pet. Corp. No. 1 Godchaux Sugars, Inc., sec. 34-15s-19e. R.U.
Amerada Pet. Corp. No. 2 South Coast Corp., sec. 35-15s-19e. Drlg. sdy. sh. 1,050 ft.

Roanoke—Jeff Davis Parish

Continental Oil Co. No. 1 Joe Sturdivant, sec. 36-10s-4w. Drk.
Humble O. & R. Co. No. 1 Williams, sec. 13-9s-4w. T.D. 8,734 ft.; abd.

South Elton—Jeff Davis Parish

Stanolind O. & G. Co.-Amerada Pet. Corp. No. 3-B Calcasieu Natl. Bank, sec. 27-7s-3w. T.D. 9,154 ft.; conditioning hole; 9⅝-in. csg. 8,647 ft.; T.D. 13,210 ft.; D.S. stk.; P.B.; 7-in. csg. 9,230 ft.; P.B. 9,188 ft.; perf. csg. 9,140-55 ft.; no showing; P.B. 8,998 ft.; W.O.C.

Starks—Calcasieu Parish

Capital Oil Co. No. 1 Lutcher-Moore, sec. 24-9s-13w. R.U.

Sulphur—Calcasieu Parish

Union Sulphur Co. No. 860 fee, 1,250 ft. W and 216 ft. N of C sec. 29-9s-10w. Drlg. sd. 3,741 ft.
Union Sulphur Co. No. 861 fee, sec. 29-9s-10w. Drlg. rk. 2,535 ft.

Timballer Bay—Lafourche Parish

Gulf Oil Corp. No. 4 State, sec. 36-23-21e. T.D. 1,373 ft.; twisted off drill collar; sdtrkd. jnk.; T.D. 2,007 ft.; W. O.C.

Valentine—Lafourche Parish

Wm. Helis No. 1 Valentine-Sugars, Inc sec. 2-17s-20e. T.D. 7,134 ft.; P.B. and sdtrkd.; T.D. 7,068 ft.; P.B. 3,500 ft.; sdtrkd.; drlg. sh. 6,045 ft.
Pan American Prod. Co. No. 2-B Community, sec. 58-17s-20e. Drk.
Pan American Prod. Co. No. 1 Ducos-Ariabat, sec. 10-17s-20e. T.D. 7,882 ft.; P.B. 3,625 ft.; W.O.C.
Pan American Prod. Co. No. 17 Harang sec. 9-17s-20e. T.D. 7,496 ft.; P.B. and sdtrkd.; T.D. 6,878 ft.; D.S. stk.; P.B. 1,850 ft.

Venice—Plaquemines Parish

Tide Water Oil Co. No. 5 Manhattan Fruit Co., sec. 26-26s-30e. Top oil sd. 7,250 ft.; T.D. 7,300 ft.; P.B. 4,800 ft.; sdtrkd. at 4,813 ft.; cd. oil sd. 7,101-68 ft.; T.D. 7,290 ft.; 7-in. csg. 7,191 ft. perf. csg. 5,960-64 ft.; 10-min. D.S.T.; tstd. 120 ft. drlg. mud with oil odor; perf. csg. 5,964-68 ft.; recvd. 14 stnds. of oil, 3 stnds. of drlg. mud and sd.; making sqze. job; P.B. 3,650 ft.; to sdtrk.
Tide Water Oil Co. No. 7 Manhattan Ld. & Fruit Co., sec. 26-21s-30e. 10¾-in. csg. 2,462 ft.

Vinton—Calcasieu Parish

M. McLean No. 17 Gray, sec. 35-10s-12w. R.U.
J. V. Reddick No. 2 Vincent, sec. 34-10s-12w. T.D. 2,275 ft.; 7-in. csg. 2,275 ft.; W.O.C.; perf. csg. 2,236-75 ft.; tstg.

Villa Platte—Evangeline Parish

Amerada Pet. Corp. No. 1 A. Fournier, sec. 44-3s-2e. R.U.

Continental Oil Co. No. 1 Hattie Haas, sec. 44-3s-2e. Drlg. sh. 1,500 ft.
Continental Oil Co. No. 1 Martha Haas, sec. 44-3S-2e. Drlg. sh. 6,878 ft.
Continental Oil Co. No. 1 Ludeau, sec. 45-3s-2e. Drk.
Continental Oil Co. No. 1 Opelousas, St. Landry Securities Co., sec. 44-3s-2e. Top Sparta 8,640 ft.; drlg. sh. 8,943 ft.
Continental Oil Co. No. 1 T. E. Vidrine, sec. 47-3s-2e. Drlg. sh. 9,408 ft.

Welsh—Jeff Davis Parish

J. Massart No. 1 L. T. Mathews, sec. 27-9s-5w. T.D. 1,714 ft.; T.A.
Stanolind O. & G. Co. No. 2 Conover, sec. 20-9s-5w. Drlg. sh. 1,069 ft.

Woodlawn—Jeff Davis County

Union Sulphur Co. No. 2 Calcasieu Natl. Bnk., sec. 12-9s-6w. T.D. 9,046 ft.; 7-in. csg. 9,056 ft.; perf. csg. 8,904-08 ft.; tstd. S.W.; making sqze. job; perf. csg. 8,894-98 ft.; I.P. 586 B.P.D.; ¼-in. ck.; grav. 36.7.

S. LOUISIANA WILDCATS

Acadia Parish

H. E. Dalton No. 1 Setting, sec. 17-7s-1w. T.D. 5,106 ft.; P.B. to approx. 500 ft. T.D. 3,925 ft.; D.S. stuck.
Humble O. & R. Co. No. 1 Finch, sec. 22-10s-1e. 9⅝-in. csg. 7,474 ft.; T.D. 10,222 ft.; P.B. 7,318 ft.; perf. csg. 7,-308-15 ft.; 19-min. D.S.T. tstd. 700 lbs. pres.; recvd. 660 ft. fluid, 85% oil and 15% drlg. mud.

Avoyelles Parish

G. C. Koch et al No. 1 Kelone, sec. 21-2n-3e. 10¾-in. csg. 987 ft.; S.D. 6,021 ft.

Beauregard Parish

Republic Prod. Co. No. 1 Lutcher-Moore Lbr. Co., sec. 10-13w-8s. 10¾-in. csg. 1,015 ft.; T.D. 9,000 ft.; prep. run Schlumberger survey.

Calcasieu Parish

Sun Oil Co. No. 1 Lutcher-Moore Lbr. Co., sec. 1-8s-13w. Cg. sh. 7,250 ft.
Wheeler Oil Corp. No. 2 Sch. Ld., sec. 1-9s-7w. 15½-in. csg. 46 ft.; S.D. 641 ft.

Cameron Parish

Humble O. & R. Co. No. 1 K. B. Hanzen, 466 ft. S and E, NW cor. SW¼ sec. 9-12s-6w. Drk.
Humble O. & R. Co. No. 1-B Miami Corp., sec. 7-14s-6w. 13⅜-in. csg. 2,-150 ft.; T.D. 9,270 ft.; P.B. 8,850 ft.; drld. by fish to 9,292 ft.; no show; S.D.
Superior Oil Co. No. 1 Sells, sec. 5-15s-8w. Drlg. sd.&sh. 6,047 ft.

Iberia Parish

Texas Co. No. 1 Bayless-Jones, sec. 58-12s-5e. Drlg. sdy. L. 7,674 ft.
Texas Co. No. 2-B Vermilion Bay, sec. 20 16s-5e. T.D. 9,101 ft.; P.B. and sdtrkd. at 5,788 ft.; T.D. 7,020 ft.; P.B. 6,385 ft.; to sdtrk.; T.D. 7,623 ft.; P.B. 7,-176 ft.; to sdtrk.; T.D. 7,348 ft.; 9⅝-in. csg. 7,263 ft.; drlg. sh.&L. 8,491 ft.

Jefferson Parish

Julius Szodomka No. 1 Carroll, sec. 12-12s-11e. Drlg. sh. 3,310 ft.

Lafayette Parish

Continental Oil Co. No. 1 Foreman, sec. 36-9s-3e. Drlg. sh. 10,802 ft.

Pointe Coupe Parish

Batchelor Oil Co. No. 1 Hackney, sec. 28-3s-8e. 20-in. csg. 117 ft.; 13⅜-in. csg. 2,170 ft.; drlg. sd.&sh. 8,620 ft.

Rapides Parish

J. J. Farrell No. 1 W. P. Aertker, sec. 16-4n-1e. Drk.

St. Bernard Parish

Gulf Ref. Co. No. 3 State Lake, Twp. 12s-15e. 13⅜-in. csg. 1,558 ft.; drlg. sd. 5,582 ft.

St. James Parish

Continental Oil Co. No. 1 Realty Operators, sec. 17-12s-17e. 18⅝-in. csg. 302 ft.; 13⅜-in. csg. 2,473 ft.; core sh. 4,-979 ft.

St. Landry Parish

Nixon & Toombs No. 1 Boagni, sec. 41-6s-4e. T.D. 8,514 ft.; abd.
Western Gulf Pet. Co. No. 1 St. Mary Ld. Co., sec. 7-8s-9e. Drlg. sh.&L. 6,-820 ft.

St. Martin Parish

Texas Co. No. 11 St. Martin Ld. Co., sec. 21-8s-7e. R.U.

St. Tammany Parish

Ozro B. Phillips No. 2 W. L. Stevenson, sec. 33-6s-10e. T.D. 2,326 ft.; P.B. 1,-509 ft.; to make D.S.T.

Terrebonne Parish

Fohs Oil Co. No. 1 Buckley & Bourg, sec. 77-19s-17e. Drlg. sh. 11,932 ft.
Fohs Oil Co. No. 1 State, sec. 41-19s-19e. 18⅝-in. csg. 246 ft.; cd. sd. S.G. 6,894-6,915 ft.; T.D. 9,232 ft.; 9⅝-in. csg. 9,226 ft.; drlg. sd. 10,430 ft.

Vermilion Parish

Magnolia Pet. Co. No. 1 J. B. Ferguson, sec. 5-12s-2w. 13⅜-in. csg. 3,084 ft.; T.D. 6,086 ft.; fsg.

Vernon Parish

W. T. Burton No. 1 Gulf Lbr. Co., sec. 32-1n-6w. Loc.

TEXAS

Week Ending April 30

GULF COAST FIELDS

Lockridge—Brazoria County

Gulf Oil Corp. No. 5 Carrie Baker, J. W. Hall Sur. No. 11. R.U.
Gulf Oil Corp. No. 4 Gibson, J. W. Hall Sur. Cg. sd. 6,368 ft.

Hastings Field—Brazoria County

E. M. Hailey No. 2 Blumer, H.T.&B. Sur. No. 28. T.D. 6,111 ft.; tstg.
Humble O. & R. Co. No. 1 R. B. Masterson, H.T.&B. Sur. No. 37. Drlg. L. 5,-174 ft.
Navarro Oil Co.-Humble O. & R. Co. No. 2 E. W. F. Beers, Perry & Austin Sur. Drlg. sh. 600 ft.
Jay Simmons No. 6 C. H. Alexander, H. T.&B. Sur. No. 27. Drk.
Stanolind O. & G. Co. No. 1 Peter McDonald, May Sloan Sur. Drlg. sh. 5,-680 ft.
Stanolind O. & G. Co. No. 1 J. J. Miller, R. A. Magee Sur. Drlg. L. 4,400 ft.
Stanolind O. & G. Co. No. 6 C. Moore, R. A. Magee Sur. T.D. 6,080 ft.; tstg.
Stanolind O. & G. Co. No. 1 Carrie B. Roberts, R. A. Magee Sur. R.U.

Old Ocean—Brazoria County

Harrison-Abercrombie No. 1 L. Augusburger, C. Breen Sur. 9⅝-in. csg. 7,-011 ft.

Hoard Exploration Co.

Seismograph Surveys

618 Esperson Bldg.

Houston - - Texas

Harrison-Abercrombie No. 1 David Kaufman, C. Breen Sur. Drlg. sh. 5,832 ft.
Harrison & Abercrombie Oil Co. No. 1 Troyer and West Texas Abst. Co., C. Breen Sur. T.D. 10,314 ft.; tstg.

Pledger—Brazoria County

Danciger O. & R. Co. No. 1 Leona H. Carter, Grey & Moore Sur. Drk.

West Columbia—Brazoria County

Adrian Moore No. 1 Gulf fee, Geo. Tennille Sur. Drlg. L. 3,850 ft.
Frost and Dunnan No. 1 E. S. Parker, Geo. Tennille Sur. Spd.
Mike Hogg No. 2 Varner, W. Varner Lge. T.D. 3,874 ft.; D.S. stk.; P.B.; W. O.C.
Sterling O. & R. Co. No. 2 Munson, Geo. Tennille Sur. Drlg. sh. 5,463 ft.
Texas Co. No. 20-A Abrams, George Tennille Sur. T.D. 5,931 ft.; plg. scrn.
Texas Co. No. 21 Abrams, Geo. Tennille Sur. T.D. 5,433 ft.; P.B. to sdtrk.
Texas Co. No. 22 Abrams, G. Tennille Sur. T.D. 5,429 ft.; tstg.

Calhoun—Heyser—Victoria County

Blanco-Buchanan No. 10 Dunwoody, A. Sisneros Sur. Drlg. sh. 3,016 ft.
Geo. Echols No. 12 W. H. Bennett, J. Galban Sur. Drlg. sh. 3,930 ft.
Normandie Oil Co. No. 6 Cook, A. Sisneros Sur. T.D. 6,034 ft.; tstg.
Seaport Oil Corp. No. 1 Mae Diener. Drlg. sh. 5,420 ft.

Cedar Point Field—Chambers County

Humble O. & R. Co. No. 2 State, Tr. 95. Spd.
Standard Oil Co. of Texas and Salt Dome Oil Co. No. 2 State, sec. 119. 16-in. csg. 286 ft.; 10¾-in. csg. 1,650 ft.; cg. sdy. sh. 5,906 ft.

Seabreeze—Chambers County

Sun Oil Co. No. 1 R. J. Barrow, A. Yarbo Sur. T.D. 8,502 ft.; 7-in. csg. on bttm.; prep. to test.
Sun Oil Co. No. 2 Sea Breeze Land Co., sec. 102, H.T.&B. Sur. Drlg. sh.&L. 6,941 ft.

Clinton—Harris County

Stanolind O. & G. Co. No. 1 Velma Johnson, Unit No. 1, Reels and Trobough Sur. R.U.

Eureka—Harris County

Allamo Drlg. Co. No. 2 Laura Lackner, J. Reinerman Sur. T.D. 7,703 ft.; perf. csg. 7,687-97 ft.; flwg. est. 6 B.P.H.
Allamo Drlg. Co. and Houston Oil Co. No. 3 Laura Lackner, H. Reinerman Sur. Loc.
Jack Frazier et al No. 1 Varner Realty Co., J. Reinerman Sur. Cd. oil sd. 7,-114-12 ft.; T.D. 7,750 ft.; perf. csg. 7,-714-32 ft.; flwd. 277 bbls. in 12 hrs.; ¼-in. ck.
J. Frazier, No. 2 Vollmer & Neiman, J. Reinerman Sur. R.U.
Houston Oil Co. No. 2 Helberg-Lackner, J. Reineman Sur. R.U.

Fairbanks—Harris County

H. C. Adams No. 2 J. P. Dawson, W. K. Hamblen Sur. T.D. 6,849 ft.; tstg.
Amerada Pet. Corp. No. 1 R. Smith, J. Waugh Sur. R.U.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 J. P. Dawson, W. K. Hamblin Sur. R.U.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 Foley, J. Clarkson Sur. T.D. 6,853 ft.; perf. csg. 6,836-54 ft.
Amerada Pet. Corp.-Stanolind O. & G. Co. No. 1 K. S. Silberg, G. Ayers Sur. 9⅝-in. csg. 1,212 ft.; T.D. 6,857 ft.; tstg.
Carroll Oil Co. No. 1 Ralph Johnston, J. N. Dement Sur. Drlg. sh.&L. 4,212 ft.
Mortex Oil Co. No. 1 H. E. Ley, J. Waugh Sur. 16-in. csg. 80 ft.; T.D. 6,-839 ft.; W.O.C.
E. L. Smith and Ownby Drlg. Co. No. 3 Meyers, Geo. Ayers Sur. Cg. 6,520 ft.
H. E. Williams No. 1-A A. Vaga, G. Williams Sur. 10¾-in. csg. 1,168 ft.; cd. oil sd. 6,823-35 ft.; T.D. 6,835 ft.; flwg.; no ga.
Union Prod. Co. No. 1 Goodykoontz, W. S. Powell Sur. Loc.

Friendswood—Harris County

Humble O. & R. Co. No. 7 Beamer, T. Choate Sur. R.U.
Humble O. & R. Co. No. 2 B. H. Goodwin, W. K. Smith Sur. Drlg. sh. 2,-467 ft.
Humble O. & R. Co. No. 8 E. A. Grey, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 1 Herman Hospital, T. Choate Sur. T.D. 5,790 ft.; flwd. wash wtr.; plg. scrn. to W.O.
Humble O. & R. Co. No. 2 Herman Hospital, T. Choate Sur. Drk.
Humble O. & R. Co. No. 1 J. L. Jones, Perry & Austin Sur. Drk.
Humble O. & R. Co. No. 1 Port City, T. Choate Sur. R.U.
Humble O. & R. Co. No. 5 J. J. Settegast, Perry & Austin Sur. Drlg. sh.& L. 5,320 ft.
Humble O. & R. Co. No. 1 E. E. Watson. Drk.
Humble O. & R. Co. No. 1-B O. P. Woodburn, A. Whitlock Sur. Cd. 6,-200 ft.; abd.

North Edna—Jackson County

Crown Central Oil Co. and H. J. Porter No. 2 Foust, Peter White Sur. Drlg. 2,630 ft.

Clam Lake—Jefferson County

Shell Pet. Corp. No. 2 McFaddin, S. A. Pace Sur. Cd. oil sd. 5,553 ft.; cg. sh. 5,726 ft.

North Cheek—Jefferson County

Magnolia Pet. Co. No. 4 J. H. Phelan, A. Stivers Sur. 18⅝-in. csg. 135 ft.; drlg. 6,420 ft.

Hardin—Liberty County

Atlantic Ref. Co. No. 2 A. E. Cessna, H. B. Johnston Sur. T.D. 7,625 ft.; W.O.C.
Atlantic Ref. Co. No. 2 W. McMurtry H. B. Johnson Sur. T.D. 7,871 ft.; 7-in. csg. on bttm.; perf. csg. 7,828-31½ ft.; jetting with gas; no ga.
Fohs Oil Co. No. 2 Johnson-Finley, H. B. Johnston Sur. Spd.
Gulf Oil Corp. No. 1 A. B. Tullos, H. B. Johnson Sur. T.D. 7,621 ft.; 5-in. csg. on bttm.
Halliburton Oil Prod. Co. No. 2 Hanchy, H. B. Johnson Sur. T.D. 7,592 ft.; fsg. P.B. to sdtrk.; drg. 7,626 ft.
Humble O. & R. Co. No. 3 Chambers, A. B. Hardin Sur. Drlg. sh. 5,670 ft.
Shell Pet. Corp. No. 2 Hanchy, H. B. Johnson Sur. T.D. 7,615 ft.; W.O.C.
L. W. Wickes No. 3 Tullos, H. B. Johnson Sur. T.D. 7,650 ft.; tstg.

Bay City—Matagorda County

Hamman Expln. Co. No. 2 Crooke, E. Hall Sur. Top sd. 9,660 ft.; tstg.; no report.
Hamman Expln. Co. No. 2 G. M. Sloan, J. T. Belknap Sur. Drk.

McCrosky—Matagorda County

Pierce Est. No. 2 fee, I.&G.N. Sur. No. 7. 10¾-in. csg. 1,081 ft.; drlg. sh. 4,-950 ft.

Palacios—Matagorda County

Bennett Prod. Co. No. 1 Foley Ld. Co., L. Goodwin Sur. Drlg. sh. 6,435 ft.
Sun Oil Co. No. 1 F. K. Robeson, L. Goodwin Sur. Drk.

Orange—Orange County

W. V. Bowles No. 1 J. H. Scales, Wm. Dyson Sur. Drlg. sh. 1,790 ft.
C. L. Brown No. 1 Lutcher-Moore, J. Dyson Sur. Drlg. sdy. sh. 5,960 ft.
Gulf Oil Corp. No. 1 O. Duhon, Wm. Dyson Sur. Cg. sh. 7,340 ft.
Ryan & Thompson No. 1 Walter-McGill, Wm. Dyson Sur. T.D. 6,123 ft.; rng. csg.; top oil sd. 6,112 ft.; 7-in. csg. 6,-111 ft.; flwd. P.L.O. for 6 hrs.; went dead; swbd. S.W.; made sqze. job; drld. out 6,114 ft.; flwg. 26 B.F.P.H.; 25 to 30% S.W.

Segno—Polk County

Gulf Oil Corp. No. 2 Ragan, I.&G.N. Sur. 15. 9⅝-in. csg. 5,587 ft.; 20-min. D.S. T. 8,146-61 ft.; tstd. 2,400 ft. P.L.O.; 140 lbs. pres.; drlg. sdy. sh. 8,840 ft.
Humble O. & R. Co. No. 2 W. T. Carter, T. F. Pinkney Sur. Drlg. sh. 3,875 ft.
Humble O. & R. Co. No. 8-B Kirby, M. Victor Sur. Drlg. sh. 6,352 ft.

Spurger—Tyler County

Republic Prod. Co.-Houston Oil Co. No. 9 Hurd, N. Hurd Sur. Drlg. sdy. sh. 6,175 ft.

GULF COAST WILDCATS

Brazoria County

Pure Oil Co. No. 1 Clemons State Farm S. F. Austin 7½ Lge. 7⅝-in. csg. 1,955 ft.; drlg. sh. 6,720 ft.

Brazos County

Pet. Heat & Power Co. No. 1 Minnie C. Dunn, J. M. Barrera Sur. Drlg. sh. 3,369 ft.

Burleson County

Red Bank Oil Co. No. 1 Coffield, E. Sante Sur. Drlg. L. 5,831 ft.

Chambers County

Geo. Anderson No. 1 Julia Casey, W. D. Smith Sur. Loc.

Fort Bend County

Strake Pet. Corp. No. 1 Sugarland Industries, Wm. Stafford Sur. T.D. 5,-157 ft.; recvd. 5 thribbles oil on 3-min. D.S.T. 5,152-57 ft.; run csg.

Galveston County

Sun Oil Co. No. 1 Atkins, Burrell Franks Sur. Drlg. sd.&sh. 2,250 ft.
Sun Oil Co. No. 1 Cade, A. Dickinson. 13⅜-in. csg. 2,218 ft.; drlg. sandstone 5,727 ft.

Harris County

Chapman Mineral No. 1 O. Harris, Wm. Jones Sur. Drlg. sh. 7,310 ft.
J. Frazier No. 1 Robert Gillespie, S. Contreras Sur. Drlg. sh. 6,560 ft.
W. S. Howell No. 1 Root, A. McCormick Sur. S.D. 2,807 ft.
O. W. Killam No. 1 Mary Hamblen, W. C. R.R. Sur. No. 11. Drlg. sh. 1,050 ft.
West Prod. Co. No. 1A fee, Geo. B. McKinstry Sur. Drlg. sh. 5,412 ft.

Jasper County

John Mayo No. 1 Cartwright, Legrande Sur. Drk.

Jackson County

Humble O. & R. Co. No. 1 J. R. Davis, I.&G.N. Sur. No. 20, Blk. 150. Drk.
Magnolia Pet. Co. No. 1 West Ranch, Ramon Musquez Sur. Drlg. sh. 2,280 ft.

Jefferson County

I. E. Harwell No. 1 State, Gulf of Mexico T.D. 5,840 ft.; D.S. stk.; pulled in two; S.D.; may abd.
Humble O. & R. Co. No. 1 State, Gulf of Mexico, sec. 8. Topped salt 1,450 ft.; drlg. anhy. 2,250 ft.

Matagorda County

J. K. Dorrance No. 1 M. Adamcik, I.&G. N. Sur. No. 1. T.D. 7,512 ft.; fsg.
Rutherford Drlg. Co. No. 1 J. A. Birkner-Williams, Low, Thayton and Barter Sur. Drlg. sh. 5,866 ft.
Sun Oil Co. No. 1 Fred Robbins, C. H Vandeveer Sur. T.D. 10,160 ft.; well tried to blow out; 7-in. csg. 10,150 ft. prep. to perf. csg.
Texas Co. No. 1 C. T. Kountze, P. J. Poole Sur. Drlg. sh.&L. 4,139 ft.

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Orange County

Texas Co. No. 1 H. J. Lutcher-Stark. Stephen Jett Sur. Drlg. sh.&L. 3,739 ft.

Polk County

C. E. Gates No. 2 I. O. Jackson, J. W Abbey Sur. Drk.

San Jacinto County

J. W. Oliphant No. 1 Gibbs, Chas. Memin Sur. S.D. 400 ft.

Trinity County

Boone Bros.-Jordan Drlg. Co. No. 1 Crauch, Joel Clapp Sur. R.U.
M. B. Gossage No. 1 C. H. Elliott, Joel Clapp Sur. Drk.

Waller County

David MacDaniel No. 1 H. C. Leverkuhn, Lacey Pearsall Sur. 10¾-in. csg. 832 ft. drlg. sh. 4,190 ft.
Stanolind O. & G. Co. No. 1 Freeman, H.&T.C. Sur. No. 99. Drlg. sh. 6,637 ft.

S. W. TEXAS WILDCATS

Atascosa County

W. M. Allison No. 1 Nieschwietz, J. De La Garza Sur. 216. S.D. 250 ft.
G. D. Curly and R. E. Phalon No. 1 Henritta Kresch, J. C. Dierks Sur. 10-in. csg. 18 ft.
G. C. Richardson No. 1 Fisher, Beaty & Moulton Sur. 1013. Drk.
S.W.R. Corp. No. 1 Miller, J. Neill Sur. S.D. 435 ft.

Bastrop County

J. W. Bibb No. 1 Lentz, F. Wilkenson Sur Top Austin Chalk with odor of oil 2,536 ft.; 5½-in. csg. 2,443 ft.; S.D. 2,550 ft
R. C. Franklin No. 2 Yarrington, Jose Manuel Bangs Sur. S.D. 110 ft.
Humble O. & R. Co. No. 1 Hellsman, J Cunningham Sur. 16-in. csg. 150 ft.; 10¾-in. csg. 1,599 ft.; cg. sh. 3,440 ft. drlg. limey sh. 5,696 ft.
Ralph Ogden No. 1 Storey, Henry Warnell Sur. Drk.
Western Gulf Pet. Co. No. 1 Green, Samuel Williams Sur. No. 4. Top ck. 2,586 ft.; drlg. ck. 2,840 ft.

Bexar County

Nami Herman No. 1 W. F. Fields, A. Bustillos Sur. T.D. 375 ft.; S.D.
Luling O. & G. Co. No. 1 Russell, Fernando Rodriquez Sur. T.D. 1,480 ft.; Edw. L.; P.B. 1,180 ft.; prep. to acdz.

Caldwell County

Banke Miller Oil Co. No. 1 Martindale, Hector McNeil Sur. Cg. Glenrose L. 2,435 ft.
Mencill Pet. Co. No. 1 J. Wallinger. Gedeon Pace Sur. S.D. 700 ft.
C. R. Richardson No. 1 Schowe, T. Maxwell Sur., Abst. 188. Drlg. 715 ft.

Cameron County

Saxet Prod. Co. No. 1 Port Isabel Irrig Co. Sur. 30. Drk.
E. B. Whittington No. 1 Gilmer, H. C. Williams Sur. No. 62. R.U.

LEGAL

United States Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the following lands and oil and gas deposits adjacent to or within the known geological structure of the West Red River and Middle Red River oil and gas fields, Tillman County, Oklahoma, are offered to the responsible qualified bidder of the highest bonus pursuant to Section 5 of the act of March 4, 1923 (42 Stat. 1448), and Section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in General Land Office Circular No. 1386: Unit No. 1, containing approximately 17 acres; Unit No. 2, containing approximately 24 acres; Unit No. 3, containing approximately 64 acres; and Unit No. 4, containing approximately 150 acres. Bids will be received on the separate units but two or more units awarded to the same purchaser may be included in a single lease. Specifications showing the location and description of the units may be obtained from the General Land Office, Washington, D. C., or the United States Geological Survey, Wichita Falls, Texas. The sale will be held in the office of the Petroleum Engineer, Geological Survey, Federal Building, Wichita Falls, Texas, at 12:00 noon on May 9, 1938. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for 1/5 of the amount of each bid, and file the showing of qualifications to receive a lease required by section 7 of Circular 1386. The remaining 4/5, together with the annual rental in advance, at the rate of $1 per acre, must be paid prior to the issuance of the lease. The bidders are warned against violations of the provisions of section 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior. The remaining lands and deposits in the bed of Red River extending from the north fork of the river to the 98th Meridian, west longitude, are subject to disposition in accordance with the Order of the Secretary of the Interior fixing April 1, 1938, as the opening date. Commissioner.

De Witt County

Howeth et al No. 1 Tipton, Sidney Sherman Sur. Spd.
Mayo Oil Co. No. 1 W. D. McCurdy, John Hunt Sur. R.U.

Dimmitt County

Texas & Maryland Corp. No. 1 McKnight Blk. 13, sec. 23. Base of Austin Chalk 5,201 ft.; top Georgetown L. 6,120 ft.; 5½-in. csg. 7,094 ft.; T.D. 7,141 ft.; twisted off D.S.; perf. csg. 7,040-73 ft.; treated with 1,500 gal. of acd.; formation would not take acd.; tstd.: slight blowout: recvd. drlg. mud; shot csg. 5,900 ft.; pulling.

Duval County

Henry Brown No. 1 Guy Est., M. E. Gussetti Sur. Cg. 1,800 ft.
Circle Oil Co. No. 1 Graham, El Paso Irrg. & Mfg. Co. Sur. No. 571. T.D. 5,010 ft.; S.D.
Corpus Christi Ref. Co. No. 1 Parr, B S.&F. Sur. 303. T.D. 6,020 ft.; abd.; top Cockfield 5,377 ft.
Frank Gravis No. 1 Megargal, J. Boyles Sur. 10-in. csg. 500 ft.; S.D.
Magnolia Pet. Co. No. 1 Weill Est., Sur. 496. Drlg. sh. 1,120 ft.
Oliver Oil Co. No. 1 Lopez, R. Lopez Sur. 140. T.D. 2,825 ft.; abd.
H. J. Porter No. 1 Fitzsimmons, J. Poitevent Sur., sec. 291. R.U.
Standard Oil Co. of Texas No. 1, Dolores Garcia Sur. Loc.
Sun Oil Co. No. 1 Ross, A.B.&M. Sur. T.D. 3,510 ft.; abd.
P. T. Wright No. 1 Hyatt, Sweden Farm Lots Subd. R.U.

Edwards County

Evans & Love No. 1 Steve Brown, Blk. 6, G.W.T.&P. Sur. S.D. 6,250 ft.

Frio County

F. L. Thompson No. 1 Davis, G.B.&C.N. G. Sur. No. 1. Drlg. sh. 1,530 ft.

Guadalupe County

Benstrasser No. 1 Eickenroht, A. Marrs Esnaurrezar Sur. R.U.
Thad O'Day No. 1 Amber, James Alley Sur. Drk.

Hidalgo County

Gulf States Oil Co. No. 1 Cardenas, Juan Jose Balle Sur. 10¾-in. csg. 1,689 ft.; T.D. 8,002 ft.; 5-in. csg. 7,997 ft.; P.B. 7,963 ft.; perf. csg. 7,930-45 ft.; flwd. 159 bbls. of 56-grav. dist. and 44 bbls. connate wtr.; ⅞-in. ck.
Hidalgo Prod. Co. No. 1 Daskam Corp., Porc. 45, Blk. 34. Drlg. sh. 2,486 ft.

Jim Hogg County

F. S. Adams No. 1 Martinez, sec. 623. T.D. 3,015 ft.; oil sd.; 5⅛-in. csg. 3,005 ft.; I.P. 100 B.P.D.
Humble O. & R. Co. No. 1 Anna Kelsy Bass, San Rafel Gr. 10¾-in. csg. 1,207 ft.

Jim Wells County

E. Calloway et al No. 1 E. O. Cook, Lavaca Grant Sur. Spd.
Tom Graham Oil Co. No. 1 Martins, Lavaca Gr. T.D. 3,534 ft.; 5½-in. csg. 3,521 ft.; flwg. wash wtr. and gas, no oil; through 9/64-in. ck.
H. H. Howell et al No. 2 Lindsey, Lavaca Gr. Spd.
Southern Minerals Corp. No. 2 Talbert, Lavaca Gr., Jose Maria Garcia Sur. R.U.

Kerr County

Edminston No. 1 Saul, Sur. 47. S.D. 55 ft.

Kleberg County

Pure Oil Co. et al No. 1 State Ld., Tr. 68, Laguna Madre Bay, Lse. No. 528 Dredging canal.

La Salle County

Finley S. Ewing No. 1 Pugh, E. L. Garrett Sur. Drlg. 910 ft.

Lee County

Eleoussa Oil Co. No. 1 Sanders, J. Vir Roeder Sur. T.D. 4,398 ft.; prep. to resume drlg.

Live Oak County

Hantho-Nelson No. 1 Geo. West, G. L. Haas Sur. Drlg. 1,410 ft.
Ray L. Martin No. 1 Adams, J. Buchannan Sur. T.D. 1,725 ft.
J. I. Newton No. 2 Geo. West, James Wright Sur. 10-in. csg. 189 ft.; S.D. 1,590 ft.
G. Schimmel et al No. 1 Geo. West, G. L. Haas Sur. T.D. 1,950 ft.; S.D.
Transwestern Oil Co. No. 1 Stephens, C. F. Simmons Subd., sec. 74. Cg. 1,530 ft.

McMullen County

Alabama Minerals No. 3 Gordon, A.B.& M. Sur. No. 127. T.D. 2,231 ft.; 5½-in. csg. 2,218 ft.; pmpg. 40 B.P.D.
Duncan Drlg. Co. No. 1 Martin Henry. sec. 6. S.D. 707 ft.
Hamill and Smith No. 1 Franklin, Live Oak Co. Sch. Ld. Sur. No. 3. Drlg. 810 ft.
R. C. Lipscomb No. 1 Shiner, sec. 54, Shiner ranch. Cd. oil sd. 1,365-70 ft.; recvd. 45 ft. oily mud.
S. M. Nesser No. 1 Franklin, J. Poitevent Sur. No. 33. Loc.
V. G. Schimmel No. 1 Jefferson O. & G. Co., C. P. Wright Sur. No. 92. Cg. 1,650 ft.

Medina County

F. A. Brown No. 1 Senne, A.C.H.&B. Sur. 105. Logged 8 ft. of sat. oil sd. 793-800 ft.; will set csg.
J. W. Cromwell No. 1 J. W. Tondre, I. J. Rogers Sur. Drlg. sh. 910 ft.
D. K. J. Oil Co. No. 1 Burrell. T.D. 2,039 ft.; S.D. after swbg. dry.
F. J. Dykstra No. 2 McMenemy, G. Petty Sur. S.D. 2,150 ft.
S. F. Ewing No. 2 Riff, J. Haby Sur. No. 42. Cg. 510 ft.
Gee Hayes et al No. 1 Conrad, J. Keppler Sur. Drlg. 450 ft.; no report.
Owens and Dean No. 1 Ben Haby, Albert Kempf Sur. No. 37. Drlg. 275 ft. No report.
Taylor & Pepper No. 1 Saathoff, Peter Eichorn Sur. S.D. 260 ft.
I. R. Trentman et al No. 1 Carle Merc Co., V. A. Johnson Sur. T.D. 1,905 ft.; 7-in. csg. 1,835 ft.; csg. split; prep. to sqze. split with cmt.; S.D.
M. L. Walker No. 1 Zuberbuien, A. Bonamy Sur. Spd. and S.D.

Milam County

Clark & Morgan No. 1 Johnson, Juan Jose Acosta Sur. Drlg. 60 ft.; no report.
Texedco Oil Co. No. 1 Graham, Charles Cornea Sur. Logged S.O. 1,135-36 ft.; S.D. 1,760 ft.
Texedco Oil Co. No. 1 Paul Garves, C. Robertson Sur. S.D. 1,170 ft.

Nueces County

Coast Line Oil Co. No. 1 State (Redfish Bay), State Tr. No. 32. Drlg. sh. 5,010 ft.
Mills Bennett Prod. Co. No. 1 Fred Talley, sec. 10, Geo. Paul Subd. 10-in. csg. 759 ft.; drlg. ahead.

San Patricio County

A. L. Bob No. 2 Green, T. T. Williamson Sur. S.D. 7,700 ft.
Conroe Drlg. Co. No. 1 Kune and Whittcliff, sec. 39, Coleman Fulton Pasture Lds. Cg. sdy. sh. 4,730 ft.
J. K. Culton No. 1 White Point Dev. Co., J. H. Sequin Sur. No. 4. Drlg. sh. 3,570 ft.
Humble O. & R. Co. No. 1 T. J. Carmody, sec. 22, Third Addn. of Taft farm lands. Drk.
Humble O. & R. Co. No. 1 Smith and Talbert, Lot 2, sec. 37. T.D. 4,836 ft.; rng. 7-in. csg.; P.B. 4,825 ft.; perf. csg. 4,820-22 ft.; tstd. 3,300 ft. oil. 400 ft. S.W. on 30-min. D.S.T.; pulled tbg. in two; fsg.

Starr County

O. C. Borah No. 1 P. G. Garcia, Juan Salinas Sur. S.D. 810 ft.
O. C. Borah No. 2 Martinez, J. Salinas Sur. S.D. 450 ft.
O. C. Borah No. 7 Martinez, Joaquin Salinas Sur. Drlg. 378 ft.; no report.
J. L. Collins No. 1 Francisco B. Guerra Santa Cruz Gr. T.D. 6,609 ft.; well blew out; cutting out D.P.
G. E. Dodd No. 1 Wardner, Porc. 84. T.D. 2,164 ft.; 4-in. csg. 2,146 ft.; swbd. dry; S.D.
G. E. Dodd No. 1-A Wood, V. Vela Sur. No. 84. Core sh. 1,500 ft.
Henshaw-Davis No. 1 Garcia, M. M. Garcia Sur. Drlg. sdy. sh. 2,140 ft.
Sioux Oil Co. No. 7 Ricaby, Porc. 83. R.U.

Travis County

I. Ripp No. 1 Thaxton, Santiago De Valle Gr. R.U.
Texas Empire Trading Co. No. 1 E. E. Jourdan, Santigo Del Valle Gr. Drk.

Victoria County

W. V. Bowles No. 2 Robertson, T. C Burnham Sur. Loc.

Webb County

C. C. Bonner No. 1 Lewis, W. P. Rutledge Sur. 460. Drlg. sh. 810 ft.
Garrison & Paris No. 1 Benavides, Hale Subd. of M. Arispe Gr., C Blk. 107. Drk.
J. R. B. Moore No. 1 Masterson, C.C.S D.&R.G.N.G. Sur. No. 17. T.D. 2,419 ft.; abd.

Willacy County

H. & H. Drlg. Co. No. 1 Laurel Bros., C.C.S.D.&R.G.N.G. Sur. No. 270. Drk.
Magnolia Pet. Co. No. 1 Armendaiz, Sa Juan DeCarricitos Gr., Sh. 4. 8⅝-in. csg. 9,640 ft.; drlg. sh. 9,900 ft.
Salvieja Oil Corp. No. 2 Garcia Ld. Co Blk. 118. T.D. 8,695 ft.

Williamson County

Marion Aldridge No. 1 Kroschewsky. T.D. 1,033 ft.; 7-in. csg. 969 ft.; S.D.
Taylor Ref. Co. No. 1 Ihlenfeldt, Willis West Sur. Drlg. L. 1,580 ft.

Zapata County

R. B. Bryant No. 1 Flores, La. Huerta Sur. T.D. 1,556 ft.; stk. D.P.; jnkd hole; skd. drk. 45 ft. north; S.D. 1,985 ft.

EAST TEXAS

(Border Counties)

Rodessa—Cass County

R. W. Norton No. 6 Moore, Meyers Sur. Drlg. sh.&L. 2,789 ft.
Union Prod. Co. No. 2 Carter et al, Bryant Sur. Drlg. sh.&L. 4,303 ft.

Bowie County

King Oil Corp. No. 1 Watts, Geo. Brinlee Sur. Drlg. 4,313 ft.

Harrison County

Ark.-La. Gas Co. No. 1 C. M. Abney, E Little Sur. Set 7-in. csg. 2,350 ft.; set csg. 4,836 ft.; drlg. 5,077 ft.

Marion County—Rodessa

Arkansas-Louisiana Gas Co. No. 1 Hollands. Hanks Sur. Set 7-in. csg. 6,092 ft.; T.D. 6,131 ft.; tstd. S.W.; sqzd. perf. and drld. to 6,106 ft.; arng. to perf. and test 6,106 ft.
Ark.-La. Gas Co. No. 2 Holland, Hanks Sur. Set 7-in. csg. 6,045 ft.; T.D. 6,085 ft.; comp.; 346 B.P.D.; ¼-in. ck.
Ark.-La. Gas Co. No. 3 Holland, Hanks Sur. R.U.
Ark.-La. Gas Co. No. 1 Pitts, C. Lockhart Sur. Hill sd. 5,918-21 ft.; tstd. est. 30,000,000 ft. gas; 300 ft. of fluid in hole; top Dees 6,145 ft.; top Pettit L. 6,550 ft.; top Tr. Pk. 6,725 ft.; set 7-in. csg. 6,250 ft.; perf. 6,148-62 ft.; T.D. 7,070 ft.; swbd. S.W.; P.B. 6,050 ft. and S.D.; high wtr.
Cable Tool Drlg. Co. No. 1 Henderson, U. Ewing Sur. Drlg. sh.&L. 6,040 ft.
Geo. Echols No. 2 Whitfield, Bennington Sur. Drlg. sh.&sd. 6,020 ft.
Gulf Oil Corp. No. 2 Grubaugh, Coy Sur. Set 5-in. csg. 6,096 ft.; T.D. 6,122 ft. comp.; 175 B.P.D.; ¼-in. ck.
Gulf Oil Corp. No. 4-A Henderson, Bennington Sur. Set 5-in. csg. 6,024 ft.; tstg. 6,025 ft.; perf. 6,010-20 ft.; tstd. S.W.; reperf. 5,990-6,002 ft.; tstd. 3,250 ft.; O.I.H.; will set flow valves.
Gulf Oil Corp. No. 1 Smith, Hanks Sur. Drlg. sd. 640 ft.
Heyser, Heard & Clardy No. 3-B Henderson, Ewing Sur. Drlg. L.&sh. 5,373 ft.
Heyser, Heard & Clardy No. 4-B Henderson, U. Ewing Sur. Drlg. anhy.& sh. 5,716 ft.
Holcomb & Thomason No. 2-B Henderson, Ewing Sur. Set 10¾-in. csg. 1,004 ft.
Hollandsworth Drlg. Co. No. 1 Brantley, Bennington Sur. Drlg. L.&sh. 4,394 ft.
Hollandsworth Drlg. Co. No. 1 Graham, Hanks Sur. D.S. stk. 6,002 ft.
Ohio Oil Co. No. 1 Mosley, Francis Sur. Set 7-in. csg. 6,038 ft.; comp.; 302 B.P.D.; ¾-in. ck.; T.D. 6,108 ft.
Ohio Oil Co. No. 2 Moseley, Francis Sur. Set 13⅜-in. csg. 210 ft.
Phillips Pet. Co. No. 1 Beard, Bennington Sur. Drlg. L.&anhy. 5,397 ft.
Rice Drlg. Co. No. 1 Haynes, Coy Sur Set 5½-in. csg. 6,090 ft.; T.D. 6,102 ft. comp.; 200 B.P.D.; ¾-in. ck.
Shell Pet. Corp. No. 1 Boykin, Gentry Sur. Cg. L.&sh. 6,084 ft.
Shell Pet. Corp. No. 1 Goodrow, Hanks Sur. Fsg. for D.S. 5,833 ft.
Shell Pet. Corp. No. 2-B Henderson, Bennington Sur. Drlg. 735 ft.
Shell Pet. Corp. No. 2 Schulter, Smith Sur. R.U.
Shell Pet. Corp. No. 1 Whelan, Thos. Gillespie Sur. Set 5½-in. csg. 5,966 ft.; T.D. 5,993 ft.; swbd. S.O.; acdzd. with 2,000 gal.; flwd. 6 B.P.H.; ⅛-in. ck., with gas-oil ratio of 18,000 to 1; recmtd. csg. 5,993 ft.; acdzd. 1,500 gal.; installing flow valves 5,993 ft.
Union Prod. Co. No. 8 Hutchinson, Coy Sur. Drlg. sh.&chk. rk. 2,108 ft.

Panola County

Texas Co. No. 1 Claude Adams, T. Cox Sur. T.D. 5,940 ft.; set 9⅝-in. csg.; T.D. 7,369 ft.; fsg. twisted D.S.

WEST TEXAS WILDCATS

Andrews County

Atlantic Rfg. Co. No. 1 Texas Univ., sec. 26, Blk. 11, University Lands. R.U.
J. Donnelly et al No. 1 University, sec. 16, Blk. 14, University Sur. Prep. run Schlumberger; T.D. 4,702 ft.
H. S. Forgeron No. 1 Lockhart-Brown. T.D. 4,030 ft.; fsg. for stuck drill pipe.
Perkins, Wright & McMillan No. 1 Cowden. Drlg. 7,236 ft.
Rogers & Rogers No. 1 O. B. Holt, P.S.L. Sur. Rng. 2-in.
Seaboard Oil Corp. No. 1 Munger-Nix sec 1, Blk. A-4, P.S.L. Sur. Tstg. on pump 5,426 ft.
Seaboard Oil Corp. No. 1 Thornberry, sec. 8, Blk. 42-A, P.S.L. Sur. S.D.R. 4,520 ft.
J. C. Wheeler No. 1 T. M. Gardner, sec 15, Blk. A-35, P.S.L. Sur. C.O. 4,631 ft.

Bailey County

Duffey & Etz No. 1 Enochs, Tract 66 League 182, Floyd Co. School Lands Sur. Drlg. plug 4,165 ft.

Brewster County

C. Dodson No. 1 Texas American Synd., sec. 66, Blk. 10, G.H.&S.A. Sur. R.U.R. 7,785 ft.

Cochran County

Helmerich & Payne No. 1 Westheimer & Daube, Lab. 14, Leg. 147. Drlg. 4,115 ft.
Honolulu Oil Co. No. 1-91 C. S. Dean, League 91, Lipscomb C.S.L. Sur. Drk.
Texas Co. No. 1 Mallett Ld. & Cattle Co. sec. 7, Blk. G, P.S.L. Sur. Drlg. 4,921 ft.

Coke County

H. E. Ogden No. 1 Rawlins, sec. 390, Blk. B-21. Tstg. 3,180 ft.
Barnett Pet. Co. No. 1 J. R. Mims, sec. 3 Blk. W, T.&P. Sur. W.O. 5-in. csg. 4,135 ft.

Crane County

Gulf Oil Corp. No. 4 McKnight, sec. 3, Blk. B-21, P.S.L. Sur. Drk.
Magnolia Pet. Co. No. 1 University, sec. 16, Blk. 30, University land, 3½ mi. NW of Church-Fields pool. Drlg. 3,535 ft.

Crockett County

H. W. Black & Eubank Oil No. 1 University, sec. 13, Blk. 14, University Sur. Drlg. 350 ft.
W. L. Bradley et al No. 1 Hoover, sec. 1, Blk. 1. P.B. 1,430 ft. to shoot.
Choate & Hogan No. 1-J University, sec.

15, Blk. 14, University Sur. Drlg. 1,065 ft.

Moore Bros. No. 1 Perner, sec. 37, Blk 2, I.&G.N. Sur. Drlg. 9,086 ft., last report.

Short & Gillette No. 1 J. W. Owens, Jose Zunegas Sur. Drlg. 220 ft.

W. F. Yates No. 1 Hoover, sec. 6, blk. 1, G.C.&S.F. Sur. S.D.O. 225 ft.

Culberson County

Collins & Brewer No. 2 C. M. Caldwell, sec. 14, Blk. 42, P.S.L. Sur. S.D.O. 535 ft.

Harry J. W. Nichaus No. 1 C. M. Caldwell sec. 15, Blk. 109, P.S.L. Sur. Drlg. by two strings tools 1,492 ft.

Quito Oil Co. No. 1 Cameron Lbr. Co., sec. 24, Blk. 81, P.S.L. Sur. R.U.S.T.

Dickens County

J. F. Marrisey No. 1 I. J. McMahan, sec 319, Blk. 1, H.&G.N. Sur. S.D. 850 ft.

Ector County

Stogner et al No. 1 Hendrick, sec. 4, Blk. 43, T.&P. Sur. Drlg. 1,714 ft.

El Paso County

Tri-State Oil Co. No. 1 Kinkel. Fsg. csg. 3,571 ft.

Fisher County

Dibrell & Patton No. 1 J. B. Stribling, sec. 110, Blk. 3, H.&T.C. Sur. Cellar and pits.

S. & D. Daube and Forrest Dev. Co. No. 1 A. C. Bennett, sec. 51, Blk. 2, H.&T.C. Sur. R.U.R.

Floyd County

Mills Bennett No. 1 T. Montgomery, F. J Latham Sur., 6 mi. S of Floydada. Drlg. new hole 4,408 ft., last report.

Gaines County

C. M. Cone et al No. 1 Riley, Blk. G, sec. 249, W.H.R.R. Sur. S.D.C. 3,090 ft.

Eastland Oil Co. No. 1 R. C. Dunbar, sec 24, Blk. A-12, P.S.L. Sur. Tstg. 4,484 ft.

Finley & Cherry No. 1 P. W. Dalmont, sec. 6, Blk. A-21, P.S.L. Sur. Drlg. 4,455 ft.

M. B. K. Drlg. Co. No. 1 A. L. Wasson sec. 52, Blk. AX, P.S.L. Sur. W.O. 7-in. 4,874 ft.

Riddle & Warr No. 1 J. B. Brown et al, sec. 26, Blk. G, C.&M.R.R. Sur. M.I.M.

Garza County

Gulf Oil Corp. No. 1 Swanson, sec. 25, Blk. 2, H.&G.N. Sur. Drlg. 4,130 ft.

Glasscock County

O. B. Greathouse No. 1 Burns, sec. 221, Blk. 29, W.&N.W. Sur. S.D.R. 20 ft.

Hockley County

Gulf Oil Corp. No. 1 Mallett Ld. & Cattle Co., sec. 6, Blk. X, P.S.L. Sur. Fsg. 5,048 ft.

Honolulu Oil Co. No. 1-77, Labor 77 League 37, Zavalla Co. Sch. Lds. Tstg. 5,051 ft.

Howard County

H. N. Harriss No. 1 Guitar, sec. 17, Blk. A, Bauer & Cockrell Sur. R.U.

Lockhart Oil Co. No. 1 Scott, sec. 86, Blk. 29, W.&N.W. Sur. Drlg. 2,590 ft.

Magnolia Pet. Co. No. 5 O'Daniel, sec. 34, Blk. 30, T.&P. Sur. Loc.

Moore Bros. No. 1 W. P. Edwards, sec. 44 Blk. 30, T.&P. Sur. P.B. 2,920 ft.; prep. shoot.

T. G. Shaw No. 1 H. N. Wilkerson, sec. 35, Blk. A, Bauer & Cockrell Sur. Loc.

Texas Co. No. 1 H. H. Wilkinson, sec. 32, Blk. 34, T.&P. Sur. Drlg. 3,283 ft.

Hudspeth County

Haymon Krupp Oil & Ld. Co. No. 1 Thaxton, SE¼ sec. 34, Blk. 74, Twp 6 Drlg. cmt. 4,237 ft.

Haymon Krupp No. 1 Briggs, sec. 24, Blk 73, Twp. 7, T.&P. Sur. U.R. 3,805 ft.

Jeff Davis County

Joiner Oil Corp. No. 1 Jones-Coffield Drlg. 3,670 ft.

Kent County

Thad A. Bryant Jr. No. 1 Haggins et al sec. 118, Blk. 1, H.&G.N. Sur. Bldg drk.

Thad A. Bryant, Jr., No. 1 House, sec 10, Blk. 1, H.&G.N. R.R. Sur., 6,000-ft. test. S.D. 200 ft.

Lynn County

John L. Baldridge No. 1 Alma Lbr. Co sec. 151, H.E.&W.T. Sur. S.D. 4,415 ft.

Menard County

Forest Dev. Co. No. 1 Corbell, J. H. Gibson Sur. No. 163. Drlg. 1,155 ft.

C. D. Haggerty No. 1 Callon, sec. 36, Jim Franz Sur. S.D. 445 ft.

Hartzell-Nawn & O'Hara No. 1 Wilhelm, sec. 24, Blk. A-1735, Indianola R.R. Sur. Drlg. 465 ft.

Pecos County

Cox & Moore No. 1 White & Baker, sec. 43, Blk. Z, T.C.R.R. Sur. Loc.

Ed Fairey No. 1 Trees, sec. 63, Blk. 8, H.&G.N. Sur. Fsg. 2,055 ft.

J. D. Kugle, Jr., No. 1 W. C. Jackson, sec. 120, Blk. 8, H.&G.N. Sur. Rng. 7-in. 2,075 ft.

Carl S. Leidecker No. 1 Iowa Trust, sec. 73, Blk. 10, H.&G.N. Sur. S.D.R. 860 ft.

Magnolia Pet. Co. No. 1 McKee. Tstg. 5,740 ft.

E. R. Minshall et al No. 1 Haynie, sec. 28; Blk. 146, T.&St.L. Sur. Drlg. 600 ft.

S. Thompson No. 1 Elsinore Cattle Co. sec. 54, Blk. D, G.C.&S.F. Sur. Drlg. by bailer 7,212 ft.

Trans-Pecos Oil Co. No. 1 Gallagher, T.&P. Sur. Drlg. 2,240 ft.

Trans-Pecos Oil Co. No. 3-A Papham, G.H.&S.A. Sur. Drlg. 2,240 ft.; last report.

Wilcox O. & G. Co. No. 1 Serf, sec. 27, Blk. 130, T.&St.L. Sur. Drlg. 5,250 ft.

Presidio County

L. C. Brite No. 4 fee, C NW¼ sec. 113, Blk 12, G.H.&S.A. Sur. Drlg. 5,340 ft.

Reeves County

Grisham Hunter Corp. & N. A. Grisham No. 1 Geo. Daniel, sec. 40, Blk. 58, T.&P. Sur. Drlg. 2,160 ft.

Ohio Oil Co. No. 1 Papham, sec. 18, Blk 54, T.&P. Sur. U.R. 1,700 ft.; T.D. 2,380 ft.

Runnels County

Stevens & Glober No. 1 Fowler, sec. 150 E.I.R.R. Sur. Attempting shut off wtr. 1,085 ft.

Scurry County

Coffield & Guthrie No. 1 E. E. Spears et al, sec. 130, Blk. 97, H.&T.C. Sur. Drlg. 50 ft.

Robinson Drlg. Co. No. 1 Martin sec. 147, H.&T.C. Sur. P.B. 2,500 ft.; S.D.

T. G. Shaw Oil Co. No. 1 First Natl. Bank. Fsg. 2,420 ft. last report.

Sterling County

Loffland Bros. & Moore Bros. No. 1 D. D. Parramore, sec. 23, Blk. 2, H.&T.C. Sur. Fsg. 725 ft.

J. W. Sward No. 1 Brennand, sec. 107, Blk. 2, H.&T.C. Sur. S.D. 968 ft.

Stonewall County

Bert Fields No. 1 J. M. Lee, J. E. Pierson Sur. S.D. rotary 125 ft.

General Crude Oil Co. No. 1 J. D. Smith, sec. 371, Blk. 2, H.&T.C. Sur., 12 mi. N Rotan. Drlg. 3,945 ft.

Swanson & Parriott No. 1 H. T. Carlisle sec. 293, Blk. D, H.&T.C. Sur. U.R. 3,818 ft.

Terrell County

D. & S. Oil Co. No. 1 Sam Bell. S.D. 960 ft., last report.

Terry County

L. E. Holtz No. 1 P. J. Ross, sec. 6, Blk. D-14, C.&M.R.R. Sur. R.U.S.T. 4,749 ft.

Tom Green County

Humble O. & R. Co. No. 1 Lewis & Ward law, sec. 5, Blk. 17, H.&T.C. Sur. Rng. electrical survey 7,586 ft.; last report.

Southern Cross Oil Co. No. 1 J. W. Wilson, sec. 30, Blk. H, A.B.&M. Sur. Loc

Spinner No. 1 Reed, Mason Ferry Ranch Sur. Drlg. 4,075 ft.

Upton County

Flippen & Hancock No. 1 Shirk Est., sec. 7, Blk. 3, M.K.&T. Sur. W.O.C. 2,678 ft.; last report.

W. D. Riser et al No. 1 King Ranch Oil & Lignite Co., sec. 8, Blk. 3, M.K.&T Sur. S.D. 730 ft.

Standard of Texas No. 1-10 University, Univ. Sur., Blk. 14, sec. 10. S.D.O. 1,711 ft.; sul. wtr.

Val Verde County

J. F. Carter et al No. 1 Seller & Sons, sec. 34, Blk. A, I.&G.N. Sur. Spd. and S.D.

Ward County

Cities Service No. 2 Brandenburg, sec 4, Blk. 32, H.&T.C. Sur. Prep. run tubing 2,096 ft., last report.

M. J. Delaney No. 1 J. E. Cooper, H.&T.C. Sur. Tstg. 2,092 ft.

J. E. Fitzpatrick et al No. 1 H. B. Carr sec. 125, Blk. 34, H.&T.C. Sur. S.D.R. 1,115 ft.

J. E. Fitzpatrick et al No. 1 F. K. Dyer, sec. 135, Blk. 34, H.&T.C. Sur. Drlg. 6,355 ft.

Hoss & Downey No. 1 Meyers, sec. 17, Blk. 32, H.&T.C. Sur. C.O. 1,945 ft.

Hoss & Downey No. 1 Ross Avery, sec. 36, Blk. 1, H.&T.C. Sur. S.D. 2,000 ft.

A. E. Lynch No. 1-A Johnson, sec. 8 Blk. 32, H.&T.C. Sur. S.I. flwd. 140 B.O. P.D. 1,935-55 ft.

Mahree No. 1 Wilson, sec. 133, Blk. 34, H.&T.C. Sur. S.D. lost tools at 5,099 ft.

Patillo & Webster No. 1 Johnson. Tstg. 1,990 ft., last report.

O. E. Schkode No. 1 Boogher, sec. 1, Blk. 32, H.&T.C. Sur. Tstg. 278 B.O.P.D.; S.I. storage full 2,078 ft.

Texas Co. No. 1-F Univ., Univ. Sur., Blk. 16, sec. 15. Drlg. 1,430 ft.

L. F. White et al No. 1 Rector-Monroe, E cor. sec. 3. Blk. 1. W.&N.W. Sur. S.D. 4,710 ft.

Winkler County

Ed. L. Gelder No. 1 R. D. Kessler & F. Kessler, sec. 14, Blk. B-3, P.S.L. Sur. Drlg. 1,800 ft.

Yoakum County

Bahago & Bond Oil Corp. No. 1 J. L. West, sec. 607, Blk. D, J. H. Gibson Sur. D.&A. 5,503 ft.

Gulf No. 1 J. C. Futch, sec. 798, Blk. D. J. H. Gibson Sur. C.O. 5,170 ft.

Gulf States Oil No. 1 Graham, sec. 267, Blk. 3, J. H. Gibson Sur. Drlg. 4,828 ft.

Helmerich & Payne No. 1 S. O'Dowd, sec. 896, Blk. D, J. H. Gibson Sur. S.D. for control head; 3,200,000 ft. dry sul. gas.

E. C. TEXAS WILDCATS

Angelina County

J. C. Bonham No. 1 Cameron Lbr. Co. E. Miller Sur., 3 mi. SE of Zavalla Co. 2,026 ft.

J. C. Bonham No. 3 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. S.D.W.O. 621 ft.

J. C. Bonham No. 4 Cameron Lbr. Co., E. Miller Sur., 3 mi. SE of Zavalla. W. O.C. 619 ft.

J. C. Bonham No. 5 Cameron Lbr. Co., E. Miller Sur., S of No. 2 well. S.D. 80 ft.

Ginter Bros. No. 4 Copes Heirs, J. Morin Sur., 3 mi. S of Dibol. Drk.

B. L. Hoffman No. 1 Jones, W. W. Hales Sur., 8 mi. SW of Huntington. Drlg. 30 ft.

Cherokee County

Bunn Drlg. Co. No. 1 C. Bounds, W. H. Walters Sur., 2½ mi. SE of Lone Star. Tstg. 4,015 ft.

Commerade Oil No. 1 J. M. King, W. Bartie Sur., 5 mi. W of Rusk. Drlg. 3,538 ft.

Dallas County

Markraley No. 1 R. S. Morris, C. Gibbs Sur., 2 mi. S of Grand Prairie. Pits.

Plaza Oil Co. No. 1 Davidson, Marchants Sur., 1 mi. NW of Seagoville. S.D. 2,257 ft.

Gregg County

Humble O. & R. Co. & Gulf O. Corp. No. 1 E. Robertson, M. Mann Sur., 2½ mi. SW of Longview Trinity test. El. 273 ft.; drlg. 9,851 ft.

Henderson County

Jones-Mallory No. 1 A. Mallory, T. S. Mitchell Sur., 6 mi. SW of Mabank. S.D. 107 ft.

Tyler & Smith No. 1 Phoenix Rlty. Co., A. L. Adams Sur., 4 mi. S of Mabank. Loc.

Houston County

Peyton Bros. No. 1 J. N. Daniels, J. M. Procella Sur., ½ mi. N of Procella Recmtg. sur. csg.; cg. 5,940 ft.

Sun Oil Co. No. 1 R. S. and H. H. Daily, J. G. Thompson Sur., 3 mi. SE of Navarro Crossing. Drk.

Limestone County

J. S. Cosden, Jr. No. 1 J. J. Bower, J Breeding Sur., near Prairie Hill. Drlg. 902 ft.

McLennan County

Chapman & Kahn No. 1 Carl Hartsman, B. C. Walters Sur., 1½ mi. S of Mc Gregor. S.D. 1,326 ft.

Kilgore No. 1 J. M. Marrs, J. S. Rutland Sur., 2 mi. S of Bosque. Drlg. 1,400 ft.

Russell & Thompson No. 1 L. L. Phillips, C. O. Campo Sur., 4 mi. S of Waco. Drlg. 190 ft.

Navarro County

G. W. Gibson No. 2 Dr. J. H. Edgar, M. Meazel Sur., 3½ mi. S of Richland. S.D. 2,200 ft.

G. W. Gibson No. 3 J. H. Edgar, M. Meazel Sur., 2½ mi. S of Richland. Pmp. 11 B.O.P.D.

Mrs. Jane Robinson No. 1 Fortson Bros. Eli Smith Sur., 5 mi. NE Corsicana Drlg. 2,670 ft.

Red River County

Daniels et al No. 1 J. J. Gaston, J. Guest Sur., 2 mi. S of Detroit. Bldg. drk.

Texas Trading Co. No. 2 So. Pine Lbr. Co., D. D. Bruton Sur., 12 mi. N of Clarksville. R.U.

Walters et al No. 1 Phamplin, W. Moore Sur., 3 mi. SE of Kanawha in NW part of county. W.O.C. 68 ft.

Smith County

H. L. Hunt et al No. 1 S. H. Bradly, T. P. Payne Sur., 10 mi. E of Tyler at Chappel Hill. Drlg. 7,130 ft.

Trinity County

Billnoski et al No. 1 Trinity State Bnk., B. F. Wright Sur., 2 mi. S of Trinity. S.D. 3,791 ft.

Boone & Jordan No. 1 U. S. Crouch, Joel Clapp Sur., 7 mi. N of Trinity. Drk.

Gassage et al No. 1 Mrs. C. H. Elliot, Joel Clapp Sur., 6½ mi. N of Trinity Drk.

Upshur County

E. J. Dupree No. 1 W. A. Lawrence, R. Polly Sur., 4 mi. S of Gilmer. S.D. 4,194 ft.

Tom Hunter and American Liberty No. 1 J. P. Carter, J. H. Fields Sur. Drlg. 8,705 ft.

NORTH TEXAS WILDCATS

Archer County

Adams O. & G. Co. No. 1 C. Moer, sec. 21, C.&P. Sur., Blk. 3. Coring 3,410 ft.

Burns & Omohundro No. 1 Dr. A. B. Edwards, Blk. 44, L. P. Hunt Subd., 5,300-ft. test. Loc.

Camp Drlg. Co. No. 1 H. Harmel, sec. 2,460, T.E.&L. Sur., 4,000-ft. test. Drlg. 1,640 ft.

Fain-McGaha Oil Corp. No. 1 R. W. Fuller, Blk. 1, H.&T.C. Sur., 6,000-ft. test. Drlg. 3,770 ft.

Helmerich & Payne et al No. 2 L. F. Wilson, Blk. 25, A.T.N.C.L. Sur. 6⅝-in. 5,088 ft.; W.O.C.; L. 5,105-16 ft.

Hines & Hancock No. 1 J. L. Anderson, Blk. 23. Anderson ranch, 4,000-ft. test. Drlg. 1,380 ft.

Hines & Hancock No. 1 W. R. Hammond, H. Corzine Sur. A-56. Drlg. 950 ft.

Kilgore-Luginbyhl & Johnson No. 1 Ford, T. M. Cecil Sur. A-982. 4,500-ft. test: S.D. 4,067 ft.

Thos. A. Jirik No. 1 Kunkel, sec. 2, P.R.R. Sur. A-1186. Spudding.

Lacreta Pet. Co. No. 1 L. H. Farmer, W. C. Winters Sur. A-663, 4,000-ft. test. Drk.

Reno Oil Co. No. 10 H. Wilmut A, sec. 4, S.P.R.R. Sur. A-1044. S.S.O. 3,760-66 ft.; 6⅝-in. 3,750 ft.; W.O.C.

Shappell Oil Co. No. 1 Grace Bell, Blk. 27, Clark & Plumb Sur., 3,700-ft. test. Spudded.

C. W. Snoddy No. 1 Jones, T. Freeman Sur. A-134. 6⅝-in. csg. 4,050 ft.; W.O.C.

Thurman & Lipscomb No. 1 L. F. Wilson, Blk. 22, A.T.N.C.L. Sur., 4,000-ft. test. S.L. 3,959-62 ft.; running 6⅝-in. csg.

Baylor County

Riddels, Pipes & Holcomb No. 1 W. H. Nichols, Jr., sec. 117, B.B.B.&C. Sur. A-85. Loc.

Wilcox O. & G. Co. No. 1 W. H. Portwood, sec. 3144, T.E.&L. Sur. Loc.

Clay County

Walter Gant No. 1 Bryant Edwards, S. C. Beldon Sur. A-12, 6,000-ft. test. S.D. 4,713 ft.

Healdton O. & G. Co. No. 1 Wallace, Belcher Subd. Drlg. 5,660 ft.

W. P. Luse No. 1 Hapgood, sec. 68 Marion Co. Sch. Ld. 5,000-ft. test. T.D. 4,100 ft.; S.D. repairs.

Joe Rogers No. 1 C. P. Davis, Blk. 6, Montague Co. School Land Sur. A-307, 4,500-ft. test. Spdg.

Wood Pet. & Roy. Corp. No. 1 I. H Kempner, Blk. 44, Bosque Co. Sch. Ld. Sur. A-10. S.D. 2,020 ft.

Cooke County

Sinclair Prairie Oil Co. No. 1 J. M. Best, T. Toby Sur. A-1,054. Drlg. 3,785 ft.

Sunset Oil Co. No. 1 J. T. Donald, S.P. R.R. Sur. A-971 3,500-ft. test; S.S.O. 2,473-94 ft.; S.D.O.

Foard County

Texas Co. No. 16 Johnson, sec. 37, S.P. R.R. Sur. Gas sd. 3,538-58 ft.; running 6⅝-in.

Jack County

Noah Daves No. 1 K. D. Baker, sec. 2709, T.E.&L. Sur., 4,000-ft. test. Drlg. 900 ft.

Harper Pet. Co. 1 Mary E. Norman, A. Pearson Sur. A-1304. Drlg. 1,850 ft.

R. S. Luke No. 1 H. M. Simpson, J. W. Abbey Sur. A-11, 3,250-ft. test. O.S. 3,010-15 ft.; 6⅝-in. 3,010 ft.; W.O.C.

Taubert & McKee No. 1 R. H. Eatherley, G. C. Stanley Sur. A-1653. Drlg. 1,800 ft.

Montague County

H. H. Powell No. 1 Arch Durham, W. J Wagoner Sur. A-936. S.D. 822 ft.

E. J. Ruwaldt No. 1 J. A. Hoffman, T. Puckett Sur. A-607. Drlg. 2,140 ft.

J. W. Sorrell et al No. 1 J. E Walthall Sam H. Smith Sur. A-662. Drlg. 3,725 ft.

Wichita County

C. W. Boller No. 1 S. Y. Collins, Charles Roberts Sur. A-540. 6⅝-in. 3,855 ft.; brkn. sdy. L. and O.S. 3,860-3,900 ft.; testing.

Geo. W. Cooper No. 1 Parker, sec. 13, H.&G.N. Sur. Drlg. 1,200 ft.

E. J. Stump No. 1 M. P. Bishop, L. Netherly Sur. A-240. S.D.O.: S.L. 3,885-3,997 ft.; shot 350 qts. 3,884-3,970 ft.; flowed 10 min. after shot and bridged: testing.

E. J. Stump No. 1 F. C. Dodson, J. Deck Sur. A-52. R.U.R.

Wilbarger County

Phillips Pet. Co. No. 1 W. T. Waggoner "Barger," sec. 11, H.&T.C. Sur., Blk. 14. Drlg. 3,677 ft.

Republic Nat. Gas Co. No. 1 W. T. Waggoner, sec. 2, H.&T.C. Sur., Blk. 4, 4,000-ft. test. Drlg. 2,475 ft.

Young County

Cosden Oil Co. No. 1 Price. Y.C.S.L. Sur. No. A-1285. Drlg. 1,210 ft.

Cosden Pet. Corp. No. 1 D. R. Sewell B. J. Bray Sur. A-1949. Drlg. 1,560 ft.

LEGAL

U. S. Department of the Interior, U. S. Land Office, Cheyenne, Wyoming. Notice is hereby given that the following lands are offered to the responsible qualified bidder of the highest bonus per acre for leasing, pursuant to section 17 of the act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674) at the royalty rate scale in the lease form shown in circular 1386: Unit No. 1, lot 4 (NW¼ NW¼) Sec. 2, 40.15 acres; Unit No. 2, SW¼ SW¼ Sec. 4, 40 acres; and Unit No. 3, NW¼ SW¼ Sec. 8, 40 acres, all in T. 35 N., R. 65 W., 6th P.M., in the Lance Creek oil and gas field, Wyoming. Bids will be received on the separate units but two or more units awarded to the same purchaser may be included in a single lease. Said units will be offered for sale at public auction at this office at 10:00 A.M. on May 16, 1938. The successful bidder must deposit on the date of the sale, with the Register of the Cheyenne land office, certified check on a solvent bank, or cash, for one-fifth of the amount bid by him, and file the showing of qualifications to receive a lease, required by section 7 of General Land Office circular 1386. The remaining four-fifths, together with the annual rental in advance, at the rate of $1 per acre, must be paid prior to the issuance of the lease. The bidders are warned against violations of the provisions of section 59 of the U. S. Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids in the discretion of the Secretary of the Interior. Register.

Howard Pet. Co. No. 1 G. R. Stewart, sec. 84, C.S.L. Sur. Drlg. 5,590 ft.
Danciger O. & R. Co. No. 1 H. C. Shanafelt, sec. 11, A.B.&M. Sur. A-1369. S.S. O. 2,776-81 ft.; drlg. 2,800 ft.
Kadane-Griffith No. 1 Sanders, sec. 1989 T.E.&L. Sur.. G.L. 4,201-35 ft.; tstg.
A. N. Munhall No. 1 Ed Johnson, A. McLennan Sur. A-185. Drlg. 4,080 ft.

RANGER (CENTRAL TEXAS) DISTRICT

Callahan County

Cooper, Weeks & Hughes No. 1 C. D. Straley, 660 ft. from W L, 1,880 ft. from N L, sec. 370, Geo. W. Denton Sur. Ordovician test, drlg. 2,200 ft. L.
Joe Gallagher No. 1 W. T. Harris, 200 ft. from S line, 1,050 ft. from E line sec. 347, G. W. Denton Sur. 2,000-ft. test, 5 mi. N Oplin. M.I.M.
J. H. Howell No. 1 E. I. Vestal, 1,149 ft. E line, 1,000 ft. N line, Jesse Dyson Sur., 2 mi. NE Cross Plains, rotary to 4,000 ft. Surf. to 100 ft.; S.D. at 900 ft.
J. C. Jackson et al No. 1 Thompson, 2 mi. S. Eula, sec. 30, B.B.B.&C. Sur. S.D 1,803 ft.; drlg. 2,370 ft.
Petroleum Drlg. Co. No. 1 Cook & Jordan, 760 ft. from E L, 1,838 ft. from N L, sec. 350, Geo. Hancock Sur. Ordovician. R.U.R.
Wittmer Oil & Gas Properties, Inc., No. 1 R. D. Williams et al, 300 ft. from N line, 467 ft. from W line sec. 2,269, T.E.&L. Sur., 2 mi. NE Putnam, 4,500-ft. test. Set 12½-in. at 1,048 ft.; show oil 1,795-1,803 ft.; set 10-in. 2,556 ft.; drlg. 2,900 ft.

Coleman County

S. M. Devine et al No. 1 Masterson, 2 mi. W of Burkett, Asa Wickson Sur. T.D. 1,836 ft.; prep. rg. csg.
Garrett Oil Co. No. 1 W. S. Smith et al., 4 mi. SE Coleman, J. Thiele Sur. 2,300-ft. test; drlg. 1,300 ft.

Comanche County

N. D. Gallagher et al No. 1 Mrs. B. J Terry. Desdemona pool. N. H Kuykendall Sur. S.O. in Ellenburger; 5 gal. sulfur and salt water on D.S. test 4,917 ft.; tstg. 4,955 ft.

Eastland County

G. D. Chastain et al No. 1 Weddington, 4 mi. N. Cisco, sec. 496. S.P.R.R. Sur. T.D. 4,079 ft.; comp.; 500,000 ft. gas at 3,826-50 ft., P.B. T.D., sdy. L.
Dobbs Oil Co. No. 1 Greer, J. E. Hardy Sur., Ellenburger test. Drk.
Hayner, Reaves & Hose No. 1 P. L. Larkin, 3 mi. NW Rising Star, 912 ft. from W line, 546 ft. from S line, NW¼, sec. 40-2, E.T.R.R. Sur. S.O. 2,525-53 ft. and 2,574-95 ft.; drlg. 2,750 ft.
Nell A. Moore No. 7 Holcomb Heirs, 970 ft. from W line and 600 ft. from N line, SW¼ 1-4, H.&T.C. Sur. Loc.

Fisher County

Forest Dev. Corp. & Daube No. 1 L. G. Bennett, 660 ft. from N & E lines, sec. 51-3, H.&T.C. Sur. Rotary to 4,500 ft.; 3 mi. SW of Rotan.
Owens-Snebold & A. C. Varner No. 1 J. H. Milsap, 3,500-ft. wildcat, 2 mi. NW McCaulley, 330 SL 330 WL, sec. 61-2, H.&T.C. Sur. Drlg. 1,230 ft.
Tom C. Patton, Inc. No. 1 John B. Stribling, 660 ft. from S and E lines, sec. 110-3, H.&T.C. Sur. Spd. to 100 ft., S.D.
Shell Pet. Corp. Corp. No. 1 J. H. Vaughn, 330 ft. from N and E lines, sec. 20-3, H.&T.C. Sur., 4,000-ft. test.

Haskell County

Fain-McGaha Oil Corp. No. 1 T. G. Hendrick, C W½ sec. 104, Indianola Ry. Sur. Set 150 ft. of 12½-in. S.S.G. 1,620-30 ft.; drlg. 2,050 ft.
J. W. and A. E. McMillan No. 1 A. E. Pardue, 440 ft. from N and W lines, S½ M. Collum Sur. No. 4 A-685. Rotary to 3 500 ft.; oil 2,810-54 ft.; cored 2,835-54 ft.; set 6-in. to T.D. and cmtd. 125 sacks; to perforate and acidize 3,000 gals.; est. 500 bbls. per day.

Jones County

Brown Eagle & C. J. Kleiner No. 1 Sullivan Heirs, 330 ft. S&E of 200-ac. tract in S. Andrews Sur. 191. Drlg. 1,170 ft.
W. W. Fondren No. 1 Cox-Manley, 330 ft. from S line and 330 ft. W of C of S line of C. B. Sheppard Sur. 70. Abd. 2,062 ft., T.D.
Mack Hayes and Montour Oil Co. No. 1 Chittenden, 7 mi. SE Hamlin, Subd. 1st McMullen & McGloin Sur. 337. Oil 3,004-22 ft., T.D.; made 5-min. head of 40 bbls.; tubing for pump test.
L. A. Hedrick No. 1 W. D. Baker, 220 ft. from N&W lines 3½ NE¼ sec. 36-O.A.L. Drlg. 1,750 ft.
Humble No. 1 Riley Horton, 330 ft. from N line, 330 ft. from E line, sec. 40-18-T.&P. Sur. Spudded.
Humble No. 1 I. N. Irwin, 330 ft. from S and W lines sec. 48-18, T.&P. Sur., 1½ mi. E Noodle Creek pool. Cored sat. 2,550-67½ ft.; set 6-in. 2,550 ft.; swabbed 18 B.O. and 72 B.W. in 3 hrs.; plugged back cement; P.B. to 2,555 ft.; pumped 73 B.O. and 10 B.W.
Humble No. 1 R. B. Spencer, 330 ft. from S and E lines, NE¼ sec. 195, B.B.B.&C Sur., West Avoca outpost. Flowed 138 bbls. per hr. 3,192-3,218 ft.; acid. 1,000 gals.
Iron Mountain No. 1 D. J. Herbst, 5 mi. E Hamlin, 330 ft. from N and E Sub 18, Austin Williams Sur. 339. Set 10-in 2,245 ft.; wtr. 2,900-05 ft.; drlg. 3,050 ft.
F. M. Loop No. 1 W. T. Young, 330 ft. from N line, 253 ft. from E. L. Young 276-ac., D. Bustillos Sur. 189. Loc.
F. W. Martin No. 1 B. N. Herndon, 330 ft. from S and W of NW sec. 1, M.E.&P. Sur. Drlg. 2,700 ft.
F. W. Merrick et al No. 1 C. A. Cox, cent. Cox 119-ac. tr., J. H. Hughes Sur. No. 201. Drlg. 2,210 ft.
Oil States Exploration No. 1 J. E. Sellers, 100 ft. from S line, 330 ft. from W line, S. Andrews Sur. 191. M.I.M.
B. H. Roth No. 1 D. A. Kinney, 4,000-ft test, 330 ft. from S and E of NW sec. 7-4, H.&T.C. Sur. Drlg. 3,760 ft.
Shaheen Oil Co. and Big Six No. 1 P. L. Telford, 220 ft. N and W lines, E½ SW¼ sec. 49-15, T.&P. Sur. Fsg. 1,675 ft.
Jay Simmons No. 1 W. T. Young, 302 ft. from S. 342 ft. from E. 37½-a. lease, D. Bustillos Sur. 189. Drlg. 1,890 ft.
W. L. Snoddy & C. C. Dodson No. 1 C. L. Steffens et al, 220 ft. from S and W lines SW¼ NE¼ sec. 32-15, T.&P. Sur. Loc.
Stanton & Miller No. 1 Gaither, 4½ mi. N of Anson, sec. 38, B.B.B.&C. Sur. S.D. 2,180 ft.
Ungren & Frazier No. 1 W. E. Fellows, 990 ft. from N line, 330 ft. from E line, S½ sec. 25-15, T.&P. Sur. Spudded.
Joe A. Worsham et al No. 1 J. H. Commons, 330 ft. from E line, S½ E 80-ac., Subdiv. 8. A. W. Hill Sur. No. 4. U.R. 6-in. to 2,900 ft.

Nolan County

Hantho-Nelson, Inc., No. 1 J. H. Withers C SW¼ sec. 65-21, T.&P. Sur. Wildcat to drill 4,000 ft. Spd. to 200 ft. W.O rotary.

Palo Pinto County

W. H. Clement No. 1 Federal Life Ins Co., 2 mi. W Mineral Wells, sec. 51, T.&P. Sur., Blk. A (E of B). Drlg. 1,710 ft.

Shackelford County

Danciger No. 3 J. E. McCown, 300 ft. from N and E lines, S½ SE¼ sec. 158, B.B.B. &C. Sur. Drlg. 1,550 ft.
Joe DeGrazier No. 1 Harbough, E cen part of county, sec. 1,563, T.E.&L. Sur 4,500-ft. test; H.F.W. 2,185-95 ft.; drlg 2,600 ft.
Forest Dev. Corp. No. 1 T. G. Hendrick NW cor. of county, 2,600 ft. from N line and 4,300 ft. from W line of sec. 1 A.B.&M. Sur. Est. 15,000,000 ft. gas per day 1,603-17 ft.; gas 1,662-65 ft., incr est. 4,000,000 ft., 1,680-85 ft.; est. 1,000,000 ft. 1,804-06 ft. and 1,810-15 ft.; S.S oil and wtr. 1,864 ft.; inc. wtr. 1,880-82 ft.; set 6-in. to 2,620 ft.; wtr. 2,755 ft top Palo Pnto 3,154 ft.; S.D.O. 3,163 ft., T.D.
J. G. Hammond No. 1 Coker, 1,620 ft. from S line and 1,020 ft. from W line, sec. 159, B.B.B.&C. Sur. Spudded.
Ungren & Frazier No. 1 J. S. McKeever, 306 ft. from W line, 354 ft. from N line, NW¼ SW ¼ sec. 14-3, H.&T.C Sur. 3,500-ft. test.; gas at 1,475 and 1,492 ft.; set 10-in. 1,539 ft.; est. 100,000 ft. gas 1,745 ft.; set 10-in. to 1,907 ft.; U.R. 8-in. at 2,100 ft.

Stephens County

Danciger Oil Ref. Co. No. 1 Mrs. Allee Copeland, 8 mi. SE Ivan, 1,196 f. from E line and 350 ft. from S line of sec. 1, M.E.P.&P. Sur. P.B. to 3,304-55 ft.; shot 40 qts.; to acidize.
Graham, Hafner, Lane & Inman No. 1 J N. Yocum, 5 mi. SE of Frankell, 25 ft. from N and E lines of farm or approx. 2,525 ft. from E line and 1,40 ft. from S line of John R. Carter Sur Trt. 1,000 gal acid 3,575-90 ft.; est. 25 50 bbls. per day; drlg. 3,455 ft.
I. C. Little No. 1 R. M. Rogers, NE¼ county, 150 ft. from E line and 1,98 ft. from S line of sec. 28, T.&P. Sur Blk. 5. Tstg. after 10,000-gal. acid 3,960-4,055 ft., 3,000,000 ft. gas; sulfur wtr. 4,490 ft., T.D.; testing gas at 3,837-41 ft.; 837,000 ft. gas at 1,600 lbs.
Lone Star Gas Co. No. 5 R. W. Brooks 400 ft. E and S of C of sec. 54-7, T.&P Sur. Ellenburger test 2½ mi. N of Van Parmer pool. Drlg. 1,000 ft.
G. Willard Rich No. 1 J. W. Andrews, 330 ft. W line, 450 ft. S line, NW¼ sec. 39-7, T.&P. Sur. Set 12½-in. at 1,620 ft.; drlg. 2,600 ft.

Stonewall County

Bert Fields No. 1 R. P. Pierson, C of E 80-ac., E. A. & S. M. Lee Sur. Abst 817. Loc.
General Crude Oil Co. No. 1 J. D. Smith SW cor. county, 330 ft. from S and E lines of sec. 371, H.&T.C. Sur., Blk. 2 Set 13⅜-in. 2,119 ft.; set 10-in. at 3,50 ft.; cmt. 150 sacks; C.O. to test show oil at 3,970 ft., T.D.
F. B. Parriott No. 1 H. T. Carlile, 33 ft. from S line, 990 ft. from E line SW¼ NE¼ sec. 293, Blk. D, H.&T.C Sur., rotary to 5,500 ft., 6 mi. NW of Swenson. Set 8⅝-in. at 3,345 ft.; set 6-in. to 3,896 ft., T.D.

Taylor County

Bert Fields et al No. 1 Sears, sec. 223, Blk. 64, H.&T.C. Sur. Drlg. 3,535 ft. with H.F.W.
Wichita Prod. Co. No. 1 J. H. Parramore, 592 ft. from E line, 400 ft. from S line, SW¼ sec. 81-14, T.&P. Sur. Drlg. 1,940 ft.

Throckmorton County

Jones & Stasney No. 1 C. T. Brockman, 330 ft. S line, 330 E line sec. 95 Comanche Indian Sur. S.D. at 1,400 ft.
Morris & Spoonts No. 1 Alden Bros., NW cor. county, 1,350 ft. from E line and 5,210 ft. from S line of Raymond Sanches Sur. A-248. Drlg. 1,178 ft.
White & Duncan No. 1 Reynolds Cattle Co., 330 ft. from S and W lines, NE¼ sec. 83. Comanche Indian Reservation. Set 10-in. at 1,405 ft.
Henry Zweifel No. 1 J. H. Lee, 4 mi. NE of Woodson, 930 ft. from E line and 2,011 ft. from S line of J. A. George Sur. Cg. 2,990 ft.

Canadian Fields

(Continued from Page 88)

a fair gas flow in a stray sand at 898 feet. It is planned to complete this test in the St. John sand, which in the old Imperial well showed gas at 1,100 feet.

John Lund, contractor, left Calgary recently with a drilling crew to start work on Guardian Oil Co. No. 1, section 7-80-13w6, which is expected to spud some time in May. Steel derrick and heavy-duty rotary equipment will be used. It is planned to drill 5,000 feet unless heavy commercial production is previously encountered, when the rig will be moved over to a second location. At 5,000 feet the drill will have passed through three potential oil-bearing horizons which will be systematically tested.

Contracts have been made for all gas produced and tentative arrangements for piping production to the West Coast. E. F. Cobb of Great Falls, Mont., and Western Securities, Ltd., of Calgary are planning a series of shallow tests to the first gas horizons. Operations are based on the belief that an unusually large gas field will be opened, when it is planned to lay a 20-inch line 430 miles to Bella Coola, British Columbia, with a possible extension to Vancouver. For handling oil production, the field is less than 20 miles from the Canadian National Railways.

Ontario Operations

In the Brownsville field, Oxford County, Ontario, Reed-Adams Syndicate No. 1, Hawkins farm, Lot 25, Concession 12, Dereham Township, finished around 935 feet with 10,000,000 feet a day open flow.

La.-Ark. Fields

(Continued from Page 79)

old shallow Shongaloo gas field, has cored hundreds of feet of formation in the Lower Marine, and is headed for the Big lime, or Smackover lime, as it is termed. Showings of gas and distillate have been found, but the important formation is the lime, which is proving productive in the trend to the north.

The deepest test in North Louisiana, Union Producing Co. No. 2 Brownfield in the Sugar Creek field of Claiborne Parish, last week set the longest string of casing cemented in North Louisiana. The operators ran and cemented 10,561 feet of 7-inch casing with bottom of the hole at 10,661 feet. Geological data from the test is not being made public. The Standard Oil Co. of Louisiana, which held a third interest in the test, transferred it to Union Producing Co. when the well passed the 10,000-foot mark. Reports indicate that the test has had several good showings and will make a well, but official information is not available.

In Cotton Valley, the Holloway sand, which has been receiving considerable development, failed to show up in four tests, which are drilling ahead to the Bodcaw formation. Among the tests was the Midstates Oil Corp. No. 1 Welori Lumber Co., a mile south outpost.

Jefferson-Lodi

The Jefferson-Lodi section of Texas Rodessa added four wells this week, the southwest outpost, Arkansas-Louisiana Gas Co. No. 1 Pitts, has thus far failed to produce in the Hill sand. The test swabbed salt water at 6,148-62 feet this week and plugged back to 6,050 where it is shut down because of high water.

California Fields

(Continued from Page 82)

the hole was drilled to 11,390 feet before running in the water string. In 35 days Superior Oil Co. has made 10,045 feet of hole including the cementing of 2,500 feet of 13⅜-inch surface pipe in No. 3 Wagner in section 35-28-25 and barring mechanical trouble may complete it within 60 days. Union Oil Co. is still held up with mechanical trouble in No. 2-34 Kern County Land and may find it necessary to sidetrack the fish and redrill from a point well above 6,000 feet.

Los Angeles Basin

In the west Long Beach field, Hilldon Oil Co. completed No. 1 Poole flowing 824 bbls. of clean 24.3-gravity oil and 200,000 feet of gas per day from 4,100 feet, through a 45/64-inch bean and shows tubing pressure of 105 pounds and a casing pressure of 485 pounds. This company has concluded a deal with Caminol Co. whereby the former will take over the latter's No. 1-8 Dominguez and carry the well down to the Miocene which is expected to be topped at approximately 7,200 feet. Present production is coming from the Pliocene and if Miocene production is developed it will greatly increase the ultimate production of the area. Hilldon has about 15 locations available as far as Pliocene production is concerned.

In the Santa Fe Springs field, Bandini Petroleum Co. recompleted one of its old wells and returned it to production flowing 570 bbls. clean 33.4-gravity oil per day from the Meyer zone.

In the East Coyote field, Standard Oil Co. completed No. 2-12 Coyote pumping 145 bbls. of 25.4-gravity oil and 20 bbls. of water per day from 4,321 feet after the hole had been finished with 460 feet of 6⅝-inch liner including 409 feet of perforated landed at 4,317 feet and 4,287 feet of 2½-inch tubing.

In the Dominguez field, Union Oil Co. No. 59 Callender proved somewhat of a disappointment as it was good for only 160 bbls. of 28.3-gravity oil, cutting 30 per cent, from 6,826 feet.

In the Kettleman North Dome field, Kettleman North Dome Association completed No. 72-4-P, in section 4-22-17, flowing 1,890 bbls. of relatively clean 33.1-gravity oil and 4,870,000 feet of gas daily from the Temblor at 8,450 feet. Kenda's deep test, No. 67-20-J, tested wet a few days ago at 10,546 feet and the 6⅝-inch water string has been recemented. Standard's deep test which is headed for the Avenal zone of Eocene age, No. 27-21-J, in section 21-21-17, is going ahead at 10,919 feet in a hard gray sand.

Amerada Petroleum Corp. abandoned No. 1 Happe in the Rio Vista gas field in section 22-4-2, as a dry hole at 7,029 feet. It has been standing idle since October, 1936. Amerada staked location for No. 2 Sacramento & San Joaquin Irrigation District No. 2 in section 18-4-3 and rig material is expected to be placed on the ground within a few days.

Market Record of Active Oil Stocks

Compiled by Carl H. Pforzheimer & Co., 25 Broad Street, New York City, Member New York Stock Exchange and New York Curb Exchange

New York Stock Exchange

1938 High	1938 Low	Week ending Apr. 30 Sales	High	Low	Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
72½	57	1,500	64½	61	62	Amerada Corp.	788,675	N.P.	50cQ	4-30-38	$2.00	114⅞	51½	125½	75
24	17¾	2,600	21¾	20⅜	20¾	Atlantic Refining	2,663,999	$25	25cQ	6-15-38	1.00	37	18	35⅛	26⅝
19	12⅛	3,900	17	15½	15¾	Barber Co.	387,149	$10	75c	12-16-37	1.00	43⅜	10⅛	38½	21
16⅜	10⅛	9,700	14	13	13¼	Barnsdall Oil Co.	2,250,344	$5	25cQ	5-2-38	1.00	35¼	10	28¼	14⅛
..	..	No sales	..	..	..	Columbia Gas & Electric Co.	.....	....	....	.....	....	..	..	..	..
10½	7	11,800	9¼	8½	8¾	Consolidated Oil Corp.	13,919,417	N.P.	20cQ	5-14-38	.90	17⅞	7	17¼	11½
34⅜	21¼	6,300	28½	26⅜	27	Continental Oil of Delaware	4,682,583	$5	25cQ	3-31-38	1.50	49	24	44⅞	28⅛
8⅞	5	3,300	7	6½	6⅝	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	17⅝	4¾	13⅞	6⅜
22⅝	12¼	2,700	17¾	15¾	15¾	Mid-Continent Petroleum	1,855,912	$10	25c	6-1-38	1.50	35⅝	14	30⅞	17¼
17¾	11	1,500	14½	13¼	13⅜	Mission Corporation	1,399,345	N.P.	25c	12-24-37	1.25	34	15	29⅞	16⅜
23	14⅛	2,400	18¼	16⅞	16⅞	National Supply	382,591	$25	$2 pf.‡	12-22-37	(‡)	41⅜	17⅝	75½	19⅞
14⅞	10	4,500	12⅞	11⅞	12	Ohio Oil Co.	6,563,377	N.P.	50cSA	12-15-37	1.00	22⅞	9	18	12⅛
15⅞	10¼	100	10⅝	10⅝	10⅝	Pacific Western Oil	1,000,000	N.P.	75c	12-15-37	.75	29¾	11¾	23½	11¾
9¼	7	100	7½	7½	7½	Pan American Pet. & Trans.	4,702,945	$5	$1 *	12-21-37	1.00	17⅛	7	20⅝	12¼
42½	27¼	9,000	35⅛	32½	32¾	Phillips Petroleum	4,449,052	N.P.	50cQ	6-1-38	2.75	64	30⅛	52⅝	38⅛
20	15	2,400	18½	18	18¼	Plymouth Oil Co.	1,029,800	$5	35cQ	9-30-37	1.65	29⅞	13	27¾	11⅞
13½	8½	10,800	11	9⅞	10	Pure Oil Co.	3,281,120	N.P.	25c	12-1-37	.25	24⅜	8¾	27⅞	16
7⅞	5	5,000	6⅛	5⅞	5⅞	Richfield Oil Corp.	3,285,120	N.P.	25c	12-24-37	.25	6½	4⅛	..	..
27½	15½	800	20	19½	19½	Seaboard Oil of Delaware	1,224,283	N.P.	25cQ	6-15-38	1.00	54⅛	16	44	30½
18¼	10	1,700	13¾	12⅝	13¼	Shell Union Oil	13,070,625	N.P.	50c	12-20-37	1.00	34¾	14⅞	28¼	14⅜
34¾	18½	1,900	24	22⅝	22¾	Skelly Oil	1,003,949	$15	50c	12-15-37	1.50	60⅝	26½	47⅜	19½
16⅜	10¾	23,800	13¾	13	13¼	Socony-Vacuum	31,151,071	$15	25c	3-15-38	.80	23¼	13	17½	12⅛
33⅞	25⅛	4,000	29¾	28½	28¾	Standard Oil of California	13,014,754	N.P.	35cQ†	3-15-38	2.00	50	27⅛	47⅝	35
35½	24¾	8,300	31⅝	28½	29⅛	Standard Oil (Indiana)	15,267,030	$25	25cQ	3-15-38	2.30	50	26½	48½	32¾
35½	32¼	No sales	..	..	..	Standard Oil of Kansas	112,837	$10	$5	12-20-37	5.00	43	30⅝	31	25
54⅛	39¾	15,000	48¾	45⅛	45⅝	Standard Oil of New Jersey	25,856,081	$25	$1.25SA†	12-15-37	2.50	76	42	70⅜	51⅛
57⅞	45	700	49½	48⅛	48⅛	Sun Oil	2,316,484	N.P.	25cQ	6-15-38	$1 & 8% Stk.	77½	44½	91	70
3⅜	1¾	5,600	2⅝	2⅜	2½	Superior Oil Corp.	1,388,079	$1	....	....	....	7¾	1½	6¾	3
44⅞	32⅝	19,400	39½	36⅛	36⅜	Texas Corp.	10,875,006	$25	50cQ	4-1-38	2.25	65⅛	34¾	55¼	28⅞
4⅞	2⅝	1,400	3⅝	3½	3⅝	Texas Gulf Producing Co.	888,135	N.P.	10c	12-23-37	.10	9⅝	2	8⅞	4⅜
10⅛	7	3,200	9	8⅛	8½	Texas Pacific Coal & Oil	888,237	$10	10c	6-1-38	.40	16⅝	5⅜	15¼	7½
15½	10⅛	3,500	13⅞	13⅛	13⅛	Tide Water Associated	6,369,175	N.P.	25cQ	6-1-38	1.20	21⅝	13⅛	21¾	14¾
21⅝	17⅛	2,500	20	19⅛	19⅛	Union Oil of California	4,666,270	$25	30cQ	5-10-38	1.40	28¼	17½	28½	20⅜
23½	20	100	20½	20½	20½	Union Tank Car Co.	1,200,000	N.P.	40cQ	3-1-38	1.60	31½	22	31⅝	22⅝
2¾	1⅝	200	2⅛	2⅛	2⅛	Wilcox Oil & Gas	424,839	$5	....	5-10-28	...	6¼	1¾	5¼	2¾

•Payable in 3½% notes. †Includes extras. ‡One-tenth share $2 preferred stock.

New York Curb Exchange

1938 High	1938 Low	Week ending Apr. 30 Sales	High	Low	Close	Stocks—	Total shares outsanding	Par value	Latest dividend	Payable or last paid	Dividends paid in 1937	1937 High	1937 Low	1936 High	1936 Low
9⅜	5	1,400	6¾	6	6⅛	American Republics Corp.	1,308,049	$10	30c	12-27-37	$0.40	10	6⅝	..	..
10¼	5¼	600	6⅜	5¾	6	Bridgeport Machine Co.	260,000	N.P.	1.25	12-30-37	$2.00	21⅜	7	21	13¼
39	32½	150	33	32½	32½	Buckeye Pipe Line Co.	200,000	$50	50cQ	6-15-38	3.75	51½	36	50	39¾
110	97	No sales	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1.50Q†	3-21-38	7.00	123	95½	124¾	105
10¼	9⅜	1,800	10¼	9⅜	9⅜	Cities Service (new)	37,804,394	N.P.	....	6-1-32	....	5⅜	1½	7⅜	3
2⅜	1	2,200	1⅜	1⅛	1¼	Cosden Petroleum	399,687	$1	....	..	....	5½	1½	4½	1½
27½	17½	2,400	23¼	20⅞	20⅞	Creole Petroleum	6,974,356	$5	50cSA†	12-15-37	1.00	38¾	20¼	39	19⅞
8¾	5½	500	7	7	7	Darby Petroleum	351,390	$5	25cSA	1-15-38	.50	18⅝	6½	18⅛	9
3½	2	200	2¾	2¾	2¾	Derby Oil & Refining	263,162	N.P.	....	.....	....	8⅜	2¼	6¾	1⅞
31	22⅝	No sales	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-2-38	4.00	47½	24½	47½	38½
42⅞	33	4,800	37⅜	35	35⅝	Gulf Oil Corp.	9,076,202	$25	25cQ	4-1-38	1.00	63½	33	59	36
70	56	2,700	68⅞	66⅞	67	Humble Oil & Refining	8,923,935	N.P.	37½c	4-1-38	2.00	87	54⅞	80	57
14½	13¼	200	16⅞	16⅞	16⅞	Imperial Oil of Canada	26,919,871	N.P.	62½cSA†‡	12-1-37	1.25	24¼	14½	24½	19¾
8¼	6⅝	100	7⅞	7⅞	7⅞	Indiana Pipe Line	300,000	$10	30c	5-14-38	.80	15	5⅞	9¾	5½
31¼	23	3,300	26½	25½	25⅝	International Petroleum	14,247,088	N.P.	$1.25†‡	12-1-37	2.50	39½	23½	39⅝	32⅝
5	3¼	300	4	4	4	Kirby Petroleum Co.	500,000	$1	10c	4-15-38	....	8¾	2⅜	5¾	2⅝
25⅛	15⅝	1,900	22⅞	21½	21⅞	Lion Oil Refining	434,820	N.P.	50cQ†	12-24-37	1.50	34	12½	17¾	7⅝
9¼	6⅝	800	7⅞	7½	7½	Lone Star Gas	5,382,723	N.P.	20c	4-20-38	.60	14¼	5¼	14¼	9⅞
9⅜	6½	4,200	7⅞	7⅛	7¼	Louisiana Land & Exp.	3,000,000	N.P.	20cQ†	12-15-37	.50	15¼	6⅜	15⅜	9⅞
8⅜	6⅝	No sales	..	..	..	Midwest Oil Co.	998,444	$10	50c	6-15-38	1.00	14⅝	6¼	..	..
5¼	4½	100	5	5	5	Mountain Producers	1,682,182	$10	30cSA	12-15-37	.60	7⅞	4½	8⅝	5
14⅝	12⅛	700	13⅜	13	13	National Fuel Gas	3,810,183	N.P.	25cQ	1-15-38	1.00	19½	12	23	17⅜
9¼	7⅝	No sales	..	..	..	National Transit	509,000	$12.50	55cSA	12-15-37	1.00	12½	7¼	15⅜	9¼
2⅝	1½	100	1⅝	1⅝	1⅝	New Mexico and Arizona	1,000,000	$1	1c	12-1-36	....	5	1⅛	6⅝	1⅝
4½	4	No sales	..	..	..	New York Transit	100,000	$5	15c	4-15-38	1.00	5⅝	3⅞	6¼	4¼
6	4	No sales	..	..	..	Northern Pipe Line	120,000	$10	20c	6-1-38	1.00	12¾	5¾	9¾	4⅞
7⅜	4⅛	11,400	5¼	4⅜	5	Pantepec Oil	1,608,700	N.P.	....	.....	....	9⅝	2¾	10⅛	3¼
3½	1⅝	200	2⅛	2⅛	2⅛	Root Petroleum Co.	336,045	$1	25c	2-1-37	.25	13¾	2	19¼	4½
4	2⅛	100	2¾	2¾	2¾	Ryan Consolidated	296,931	N.P.	....	.....	....	6½	2¼	4¾	1⅞
5⅜	3⅜	No sales	..	..	..	Southern Pipe Line	100,000	$10	15cSA	3-1-38	.45	7¼	3⅞	7⅞	3¼
39	28¾	600	33½	32	32	South Penn Oil	1,000,000	$25	50cQ†	3-31-38	3.65	56	35	44	32½
22¼	19½	No sales	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	50cQ	4-1-38	2.00	42	20	60	44
18	15	1,500	16	15⅝	15⅝	Standard Oil of Kentucky	2,604,790	$10	25c	3-15-38	1.50	21⅛	14¾	23⅜	17⅛
7½	6⅛	No sales	..	..	..	Standard Oil of Nebraska	166,403	$25	25c	3-29-37	.25	13¾	8	14⅝	11
22	16¼	400	18⅜	18⅛	18¼	Standard Oil of Ohio	753,740	$25	25c	3-15-38	1.50	45	16	40	21¾
3¼	2⅛	3,100	3	2⅞	3	Sunray Oil	1,910,119	$1	10c	12-24-37	.25	4⅞	2	5	2⅝
4⅜	3½	900	4¼	4¼	4¼	Texon Oil & Land	336,028	$2	15cQ	3-31-38	.45	7⅝	2	9¾	5⅝
7⅝	4⅝	2,000	6⅛	6	6	Transwestern Oil Co.	750,000	$10	....	.....	....	13¾	4⅝	..	..
5¼	2¾	7,000	3⅞	3¼	3⅜	United Gas Corp.	7,818,959	$1	....	.....	....	13⅝	3	10¾	4

†Includes extras. ‡Payable in Canadian funds. §Of which $1 was in preferred stock.

PERSONAL

PROF. STANISLAS PILAT, authority on petroleum technology, of Lwow, Politecin, RKA, Poland, is making an inspection trip through the United States. He is accompanied by MRS. PILAT and by two engineers of Socinskiego, Poland, R. MONSIOR and L. TOMASIK.

JOHN GALLOWAY, geologist for the Standard Oil Company of California, is preparing to head a geological and geophysical party which will engage in exploration work in western Canada. Mr. Galloway expects to make his headquarters in Calgary. The Canadian venture will represent another of a series of development enterprises which have taken Standard Oil Company of California men to Alaska, South America, Arabia, and other distant regions.

WILLIAM D. GRAY, Gray & Wolf, independent oil operators, is moving his office from San Antonio to Houstion, Tex. R. J. WOLF, the other member of the firm, will continue to maintain an office in Tyler, Tex.

A. W. LEONARD, president of the Devonian Oil Company, and other company officials were guests last week at a dinner on the Duggan ranch in Cochran County, West Texas, where that company is chief developer in the Duggan pool.

DR. A. E. DUNSTAN, chief chemist of the Anglo-Iranian Oil Company, Ltd., has been awarded the Redwood medal of the Institution of Petroleum Technologists in recognition of his distinguished services to the science and technology of petroleum. The medal was presented by the president, LT.-COL. S. J. M. AULD, at a recent meeting of the institution in London.

HARRY R. PALMER, independent California oil investor, is a copartner in the newly formed Palmluck Oil Company. Other partners are ROY PALMER, ROY LUSE, LOUIS P. PINK, and HOMER J. RISDEN. The Palmluck is spudding in a 3,000-foot wildcat test in the Newhall region of Los Angeles County, where the Barnsdall Oil Company recently discovered a new field.

F. L. BUNN is manager of new zone offices opened by the Pure Oil Company in Madison, Wis., in the remodeled plant formerly occupied by General Laboratories. The zone offices, established four years ago, were formerly in the Tenney Building. RAY ANDREWS is in charge of sales in the Madison market. Included in this zone are Wisconsin, Iowa, northern Michigan and portions of Minnesota and Illinois. There are 35 members of the zone office staff.

JOHN SHERRIN, president of the Shamrock Oil & Gas Company, Amarillo, Tex., was in Hidalgo County, Texas, last week, making a preliminary survey of the La Blanca high-pressure gas field. His company is studying the possibilities of converting the gas of various Rio Grande fields into gasoline. The Shamrock already has two plants in the Texas Panhandle.

H. P. GRIMM, independent California operator and former president of the Pacific Western Oil Company, has been elected president of the Bolsa Chica Oil Company, Los Angeles. DORA A. AUGUR was elected vice president, FRANCIS J. SHAVER general manager and E. C. ASCHE secretary. Mr. Grimm left for New York on a business trip after the meeting.

W. DUARD, formerly with the Mexican-Sinclair Petroleum Corporation, New York, has been transferred to Venezuela, to supervise drilling a wildcat test for Compania Consolidade Petroleo.

A. S. PAWLING, president and general manager of the Standard Marketing Company, recently organized in New York by a group of oil sales experts to act as marketing and sales representative, announces that the certificate of incorporation has been amended to change the name to Major Marketing Company. "This change," a statement by the company says, "was deemed necessary when it became evident that it would not be clear to the trade that Mr. Pawling, formerly a sales and marketing executive of Standard Oil Company of New Jersey, is now the head of an independent business." Other officers of the company, which has offices at 26 Broadway, New York, are MARTIN A. DEWEY, vice president in charge of sales, and B. W. JACKSON, secretary-treasurer. In addition, directors include CHARLES M. PIPER.

Do You Remember?

From The Oil and Gas Journal Files

25 YEARS AGO

The B. B. Stroud Company of Braddock, Pa., is building a plant in the Bradford field for the manufacture of gasoline from natural gas and for pumping wells by the use of compressed air. The company will get the gas free in return for the free service of pumping the wells that produce it.

John Wolfe, Prairie Oil & Gas Company's assistant production superintendent, has resigned to go with Nederlandische Kolonial Petroleum Maatschaapij, in Java. Mr. Wolfe will be in charge of the company's operations.

Col. Charles W. Fuller, 70, an attorney for the Standard Oil Company of New Jersey, dies in Bayonne, N. J.

20 YEARS AGO

Okmulgee Producing & Refining Company buys the Pan American Refining Company plant in West Tulsa for $2,000,000, the purchase including the Pan American contracts and business.

Dr. J. A. Udden, head of the technological department of the University of Texas, tells the Texas legislature that it would take 100 years to make a complete geological survey and investigation of the mineral resources of Texas.

In order to give all his attention to his $1-a-year job with the National Petroleum War Service Committee, Tom O'Donnell has resigned as president, general manager and director of the California Petroleum Company.

Fred A. Robertson, tool dresser, slipped and plunged into the 18-inch hole of a drilling well in California, 252 feet in depth. A basket grab was used to recover the corpse from the mud-filled bottom.

10 YEARS AGO

Howard N. Cole, vice president and general manager of the southwestern producing division of the Pure Oil Company, dies in Tulsa.

S. J. Magee, in a history of natural gas, brings out the fact that the Chinese transported natural gas in bamboo pipes and used it for fuel and light as far back as 900 A.D.

WALLACE C. THOMPSON, chief geologist for the General Crude Oil Company, Houston, Tex., is to be principal speaker before the Dallas Geological Society next week, discussing Texas cross sections.

RALPH BOLTON, Standard Oil Company of New Jersey representative in Europe, will arrive in the United States soon for the annual meeting of operating department executives in Seaview, N. J.

DR. F. W. L. TYDEMAN, of the Shell Development Company, San Francisco, has left the home office on a trip to European countries. He will spend several weeks with affiliated Shell interests before returning to the United States.

BERNARD COWEN, general manager of the Pacific Oil Company of Melbourne and pioneer distributor of American lubricants in Australia, left Los Angeles Harbor a few days ago after business conferences in Los Angeles and San Francisco.

K. T. McCAMMAN, formerly production engineer in the Shell Oil Company's office in Bakersfield, Calif., has been made production foreman in his company's prolific Ten Section field between Bakersfield and Taft. Mr. McCamman's former position has been filled by H. F. DANGBERG, who was transferred from the company's Long Beach office.

CARL FISHER, Wichita, Kans., oil operator and new member of the board of directors of the Derby Oil & Refining Corporation, was elected president of that company last Saturday. Mr. Fisher, elected to the board at the recent annual stockholders' meeting in Jersey City, N. J., succeeds BERKELEY WILLIAMS of Richmond, Va., resigned. Mr. Williams will continue as a director.

PARAGRAPHS

D. E. PARK has been transferred from Colombia by the Texas Company to Caracas, Venezuela. The Texas Company will drill one wildcat test this year in the Amacuro Delta district.

M. L. HAIDER, chief engineer of the Carter Oil Company, Tulsa, has been appointed national chairman of the 1938 topical committee on production practice of the central committee on drilling and production practice of the American Petroleum Institute's Division of Production. Chairmen of district committees follow: California district, D. L. CALDWELL, Barnsdall Oil Company, Los Angeles; California district subcommittee on gas engine (multiple-cylinder) maintenance, H. M. HENDERSON, Standard Oil Company of California, Taft; Mid-Continent district, H. F. BEARDMORE, Amerada Petroleum Corporation, Tulsa; Southwestern district, P. D. TORREY, Sloan & Zook Company, Houston, Tex.; Eastern district, W. M. PECK, Pure Oil Company, Saginaw, Mich.

W. W. ORCUTT, vice president of the Union Oil Company of California, one of the pioneer geologists in California and a former classmate of former President HERBERT HOOVER, recently completed 40 years of active service with the company, and A. O. PEGG, superintending engineer of Union Oil's marine department, completed 35 years.

W. JENNINGS YOUNG, for several years vice president in charge of operations of the Oklahoma Natural Gas Company, Tulsa, has resigned to become president and a director of the Northern Oklahoma Gas Company at Ponca City, Okla. Mr. Young had been with the Oklahoma Natural 18 years. He is a native of Butler, Pa., and a graduate in metallurgical engineering from Pennsylvania State College.

CORNELIUS F. BURK, of Sarnia, Ontario, sailed from New York last week for Talara, Peru, accompanied by his sons, LAWRENCE and CORNELIUS BURK, JR. Mr. Burk is connected with International Petroleum Company, which owns a refinery and producing properties in Peru.

JOHN R. HUEGEL, formerly president of the Huegel-Gustafson Petroleum Company, marketers and jobbers, Chicago, is now vice president of the Bodie-Hoover Petroleum Corporation of that city, which has taken over the Huegel-Gustafson business, with most of its personnel. EDWARD HUEGEL has been assigned to the Indiana and Michigan territory. HOMER L. ROBINSON, formerly president of the Fred G. Clark Company of Illinois, has been made a vice president of Bodie-Hoover.

RALPH ALEXANDER, former farm boss of the Crane district in West Texas for the Magnolia Petroleum Company, has been promoted to superintendent of the newly formed Lea County, New Mexico, district.

HERMAN STABLER, chief of the conservation branch of the United States Geological Survey, recently left his office in Washington, D. C., to visit the new oil fields in the San Joaquin Valley of California, making his headquarters at the U.S.G.S. camp near Taft.

HERBERT G. DYE, drilling superintendent for the Taft Well Drilling Company, is making frequent airplane trips between his office in Bakersfield, Calif., and Willows, in Glenn County, that state, where his company is drilling a wildcat for the Ohio Oil Company. This test, 370 miles from Bakersfield, is the most northerly one in California.

W. E. McMAHON, general counsel for the Standard Oil Company of New Jersey in Mexico, and FRANK FEUILLE, counsel in foreign matters for the Standard Oil Company of California, spoke before the Institute of Public Affairs in Fort Worth, Tex., last week on the Mexican oil situation. Theirs was the first public statement made by the oil companies on Mexico's expropriation of properties.

OSCAR J. TUTTLE, sales manager of the Cities Service Oil Company, has been transferred from Tulsa to Chicago owing to expansion of the company's marketing activities and to develop a closer relationship between the manufacturing and sales divisions. Mr. Tuttle will keep in close touch with the refineries in Ponca City and Okmulgee, Okla., whose operations are directed by H. W. CAMP, general manager of refining.

G. E. Goddard Advanced

George E. Goddard, named manager of the oil production division of the Cities Service Oil Company last week, has packed a wide range of experience into his oil career.

GEORGE E. GODDARD

Starting as a roustabout near Woodsfield, Ohio, for the Fisher Oil Company (now Carter Oil Company), he soon was working as a driller for the Columbia Gas & Electric Company in the oil and gas development work in West Virginia. Next he was employed by a drilling contractor on Empire Gas & Fuel Company properties in the Eldorado field of Kansas. It was a short step to joining the Empire itself in 1917. Three years later he was made district superintendent at Eldorado.

Swift changes followed. First Mr. Goddard was transferred to the Hull field on the Texas Gulf Coast, where the Empire was doing development work. In 1922 it was the Smackover field, Arkansas; 1924, Burbank field, Oklahoma; 1925, back to Kansas for the Greenwood County play; 1926, Wichita Falls, Tex., where the Empire had leases in the Waggoner pasture field; 1930, East Texas, where Mr. Goddard supervised completion of more than 200 wells. In 1934 he was advanced to assistant superintendent of production, with headquarters in Bartlesville, Okla. Further rise came in January, 1936, when he was made purchasing agent, which position he held till promotion to his new post. Incidentally, Mr. Goddard graduated from the Pace School of Accountancy in New York, and he is a certified public accountant.

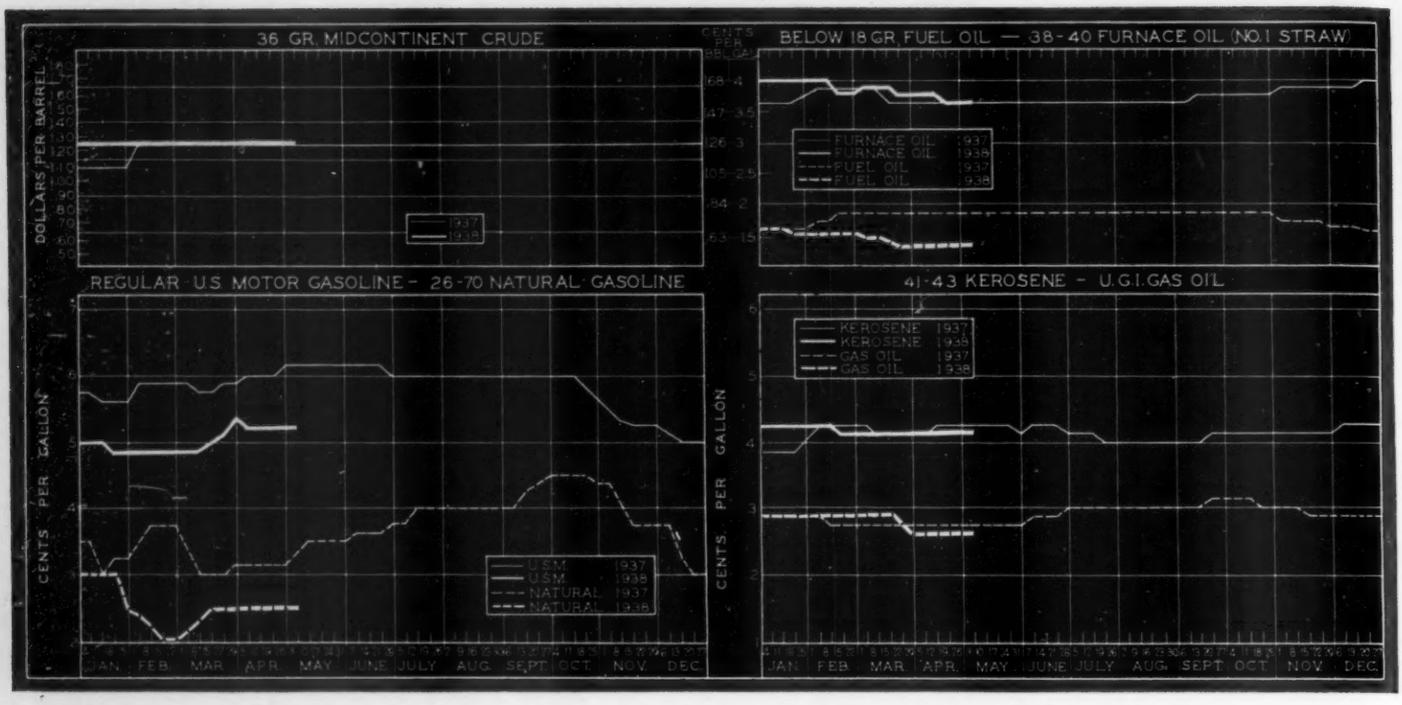
C. M. CREBBS, president of Mene Grande Oil Company, Venezuelan subsidiary of the Gulf Oil Corporation, is in New York on a business visit. He planned to return about May 6.

DAVE BARRETT, of the New York fuel oil department, Standard Oil Company of New Jersey, is to receive a gold medal for bowling the highest score of the season in the company league. He recently bowled a 259 game.

JOHN DODGE, formerly with the Standard Oil Company of California and now professor of petroleum engineering in the University of Southern California, addressed a meeting of the American Institute of Mining and Metallurgical Engineers in Los Angeles, disclosing observations he made on a recent world tour of the foreign oil fields.

B. H. VAN DER LINDEN, from The Hague, Holland, representing the Dutch-Shell group; R. B. ROARK, of Tulsa, executive vice president of the Shell Petroleum Corporation in the Mid-Continent region, and R. W. BOND of Tulsa, Shell production manager; and WALLACE H. COLLINS, district superintendent, toured the K.M.A. field of North Texas last week, inspecting Shell's holdings.

R. M. BENARDEAU, who for many years was connected with the Stanolind Oil & Gas Company as mechanical engineer, has become vice president and general manager of the Franco Dominion Development Corporation with offices in the Ramsey Tower, Oklahoma City, Okla. Mr. Benardeau is on the committee to welcome foreign delegates to the International Petroleum Exposition and being French by birth with ready command of both French and Spanish, will be of particular help to visitors from other lands.



Representative Mid-Continent Quotations on Crude Oil and Refined Products, Basis Oklahoma (Group 3)

Underlying Conditions Keep Group 3 Gasoline Market From Feeling Fit

By T. F. SMILEY

The gasoline market in the Group 3 area was trying this week, without marked success, to make itself believe it felt better. Some of the underlying conditions were not conducive to peace of mind. For instance, there was still an overabundance of material, chiefly low-octane, looking for outlets. Also runs to stills were not being restricted to such a degree as to create confidence that the country's total stocks would be brought into line with requirements in time to insure against dumping before the heavy-consuming season ends.

Quotations Sagging

Quotations on low-octane material sagged noticeably, owing principally to excessive inventories in East Texas. That district, no longer able to move its output to the Gulf Coast because of unwieldy accumulations there, has been obliged to turn to northern markets, which gave it an indifferent reception. The 63- to 66-octane grade suffered from underselling, along with the lowest member of the group. Complaint was heard against the practice of applying the blanket designation "62 octane and below" to everything under 63 octane. It was declared this allowed material of extremely poor octane rating to pull down the price for gasoline just under the 63 rating.

The regular grade was maintaining last week's price of 5¼ with difficulty, and there were reports that concessions were being made in scattered cases by refiners who found themselves with too much gasoline and too little cash.

Although it seems well established that the country's excessive stocks of gasoline are in strong hands, the fact remains, observers point out, that unless these stocks are reduced sharply the refining industry will continue to be in a vulnerable position. The explanation offered by some refiners of their failure to curtail output and draw from storage is that they are obliged to maintain their current rate of operations in order to supply the demand for products other than gasoline.

Consumption, stimulated by pleasant motoring weather in widening areas, was gaining gradually, and some refiners reported an increasing volume of jobber orders. This, along with the nearing season of tourist travel, afforded ground for such signs of cheerfulness as were discernible in the trade. One broker, never accused of being overoptimistic, remarked, "If there is as good a movement of gasoline in the next 10 days as there has been in the past 10, distress stocks should be well cleaned up."

Natural gasoline was weaker and prices were pointing downward. The Texas material, which had been commanding an eighth more than the Oklahoma, lost its extra fraction, which gave rise to speculation as to whether the Oklahoma price might not drop. Small manufacturers, it was said, no longer were able to find outlets in the spot market as they had been for weeks, and were taking the best they could get from indifferent buyers.

Tractor Fuels Brisk

Tractor fuels were moving briskly, with excellent prospects for the approaching season. In fact, they presented the most active spot in the refinery market. Plowing operations now are being carried on in northern regions at a lively rate This work scarcely will be finished before harvesting begins in southern territory. A bumper wheat crop—estimated to be the third if not the second largest in the nation's history—is expected to make heavy drafts on gasoline as well as tractor fuel, since transportation of the crop involves employment of thousands of trucks. The harvest season, opening in the South and moving northward, will begin next month and extend into August.

The heating oils, excepting those at the top, were having a bad time, with quotations working downward. The hoped-for pickup in the lubricant group failed to appear. Both bright stocks and neutrals lacked life. Wax continued dull.

Refined Oil Market Barometer

Failure of many refiners to make adequate reductions in runs to stills is keeping alive the fear that gasoline stocks will not be brought into balance with requirements in time to avert serious market disturbance. Some plants are declared to be operating at a loss largely owing to the disparity between the cost of crude and the price received for gasoline and other products.

MID-CONTINENT. Gasoline lacks strength. Naturals off. Tractor fuels active.

EAST COAST. Favorable motoring weather helps gasoline market. Lubricants dull.

GULF COAST. Kerosene and gasoline dull. Inquiries give brighter tone to fuel oil.

CALIFORNIA. Market generally soft. Consumption below normal. Spot business weak.

PENNSYLVANIA. Kerosene in slightly better demand. Gasoline moderately improved.

CHICAGO. Gasoline consumption rising. Tractor fuel steady. Heating oils sluggish.

Increasing Buoyancy in Eastern Coast Motor Fuel Markets

By H. STANLEY NORMAN

NEW YORK, May 3.—Advent of the vacation season coupled with more favorable driving weather to lure the week-end driver is giving increasing buoyancy to the motor fuel market. Prices in the tankcar and tank-wagon markets in this and surrounding territory remained substantially unchanged last week. There is increasing resistance by Gulf Coast refiners against price concessions and although open market trading is scarce shipments against contracts are picking up materially, traders in this territory report.

Basically, the motor fuel market remains unchanged here with most sellers quoting 6½ cents per gallon for 65 octane material to the tankcar trade and 6¼ cents to barge lot dealers. Reports last week that one dealer was offering 65 octane gasoline in tankcars at 6⅜ cents per gallon could not be confirmed. In fact, the reports were denied. Developments on products other than gasoline were not particularly encouraging, but some of the materials involved in the downward movement of prices in the past six weeks appear to have about touched bottom and the structure is leveling off at existing rates. It appears doubtful that the tanker market will slide much below present rates. However, one dirty boat was engaged last week for service from Aruba to the United Kingdom for 14 shillings, a new low for the season and representing a decline of about 1 shilling, sixpence from the last dirty tanker chartered from Aruba.

There has been practically no open market chartering for coastwise service despite the low rates prevailing. Several owners have their boats tied up and do not intend to offer them for service until conditions improve.

The lack of business in the open refinery market on the Gulf Coast is partially explained by the mounting practice of contracting ahead for requirements.

Motor fuel on the Gulf Coast is quoted to the domestic trade at 5 to 5⅝ cents per gallon while the export grades are quoted from 4¾ to 5⅛ cents.

One small cargo amounting to 50,000 bbls. of gas oil with a 55 diesel index was reported sold on the Gulf Coast last week for 3⅞ cents per gallon. The cargo is intended for July loading. The same supplier closed sale of 12,000 bbls. of gas oil with no diesel index specified at 3⅝ cents.

Since the disposal of about five cargoes of heavy fuel oil on the Gulf Coast three weeks ago at a price generally reported between 70 and 75 cents per barrel, there has been little activity. Most refiners participated to some extent in filling the cargoes and have elevated their opinions of the current market by 10 cents per barrel. The expected concentration of buying on the Gulf Coast by some formerly supplied from Mexico has not materialized. Some of the buying three weeks ago probably was the result of the Mexican situation, but after the first flurry the business ceased. Refiners report that practically no inquiries are coming into the Gulf market for motor fuel. There are still a few bargain hunters in the gas oil market.

Distributors in the North Atlantic territory are depressing the heavy fuel oil market and material is reported turning in substantial quantities in New York at 2¾ cents. Some companies are clinging to their previous postings to the retail trade of slightly better than 3¼ to 3½ cents per gallon. In view of season conditions, however, strictly limited quantities are moving at the higher prices.

Bunker C fuel oil to the marine trade is holding reasonably firm and is moving in satisfactory quantity at $1.05 per barrel. Diesel oil is also unchanged at $1.85 per barrel and the market is reported in fairly strong position.

Retail motor fuel markets are moving abreast of the tankcar and tank-wagon structure in that most areas are stable and normal. The concessions below the New York price continue in New Jersey. The Boston market has not reacted from the one-half cent per gallon tank-wagon price cut instituted two weeks ago, but consumption in that and other New England territories is picking up sharply.

Kerosene was reported in slightly better demand in the western Pennsylvania refining district, but business in this product was said to be "slow" in New York and on the Gulf Coast. Kerosene prices in New York range from 5¼ to 5½ cents per gallon in the tankcar trade and from 4½ to 4⅝ cents on the Gulf Coast. More Pennsylvania refiners are asking 5⅛ cents per gallon for kerosene than in the past two weeks during which at least an important portion of the suppliers were offering 45 w.w. material for 5 cents. Kerosene is moving in a more spirited fashion into the agricultural districts as spring planting and crop culture move into full swing. This movement has proven particularly beneficial to the western Pennsylvania refiners and kerosene is reported on firmer foundation in that quarter.

Lubricating oils continue to seek their market level and some grades have been depressed by a half to a full cent per gallon. In view of the greater interest displayed by jobbers, however, it is indicated that the market may strengthen or at least cease its decline started early in April. Neutral oil of 25 pourpoint was dropped a cent to 15 cents per gallon by most suppliers, but other grades slumped no more than a half cent per gallon. High pour test bright stock was off a half cent to a range of 13½ to 14 cents per gallon. Grades with lower pourpoint were unchanged.

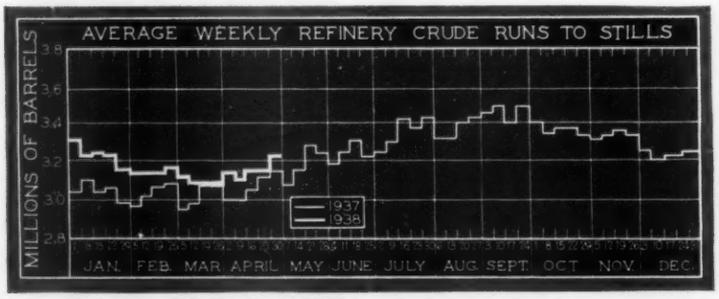
There has been some improvement in the export demand for wax during the past two weeks, but prices are generally unchanged at 1.85 cents per pound for the crude scale grades. Domestic business in wax is following routine lines and is lacking feature.

A. P. I. Weekly Refinery Statistics

Week Ending April 30, 1938

	Capacity reporting (per cent)	Daily crude runs (bbls.)	Total gasoline stocks	Gas oil and fuel oil stocks
East Coast	100.0	493,000	22,757,000	9,902,000
Appalachian	88.4	108,000	3,465,000	1,365,000
Indiana, Illinois, and Kentucky	92.4	417,000	15,017,000	7,736,000
Oklahoma, Kansas, and Missouri	84.7	262,000	8,134,000	3,664,000
Inland Texas	56.6	135,000	2,628,000	1,625,000
Texas Gulf	95.7	787,000	13,627,000	8,723,000
Louisiana Gulf	96.6	132,000	2,275,000	2,987,000
North Louisiana and Arkansas	63.7	42,000	529,000	609,000
Rocky Mountains	69.7	51,000	2,275,000	796,000
California	90.9	509,000	15,672,000	88,263,000
Total reported	89.0	2,936,000	86,379,000	125,670,000
Estimated unreported	.....	279,000	4,960,000	2,600,000
*Estimated total	.....	3,215,000	91,339,000	128,270,000
*Estimated total, previous week	.....	3,150,000	91,479,000	127,148,000
*May 1, 1937	.....	3,140,000	82,273,000	94,530,000

*Bureau of Mines, currently estimated.



Stocks of Crude Oil in the United States

(BUREAU OF MINES ESTIMATES)

Week ending April 23, 1938	307,654,000 barrels
Week ending April 16, 1938	306,774,000 barrels
Week ending April 24, 1937	302,828,000 barrels

San Francisco Exhibit

Preliminary financing has been completed for a comprehensive exhibit of the domestic uses of gas at the Golden Gate International Exposition which will open in San Francisco, February 18, 1939.

Retail Oil Markets

Tank-wagon and filling station prices on gasoline and kerosene furnished by the larger marketing firms

Prices as of May 3, 1938

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline is the regular or standard grade. In most areas a third grade and a premium grade are also available.

Standard Oil Co. (Indiana)

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank-wag.
Chicago, Ill.	15.6	13.6	4.0	10.5
Decatur	15.6	14.1	4.0	10.5
Joliet	15.6	14.1	4.0	10.5
Peoria	15.6	14.1	4.0	10.5
Quincy	15.4	13.9	4.0	10.3
Davenport, Ia.	15.6	14.1	4.0	‡10.5
Des Moines	15.4	13.9	4.0	‡8.3
Mason City	15.8	14.3	4.0	‡10.7
Sioux City	15.6	14.1	4.0	‡10 5
Duluth, Minn.	17.4	15.9	5.0	11.3
Mankato	17.0	15.5	5.0	10.9
Minneapolis	17.0	15.5	5.0	10.9
LaCrosse, Wis.	17.0	15.5	5.0	10.9
Green Bay	17.4	15.9	5.0	10.3
Milwaukee	16.8	15.3	5.0	10.7
Detroit, Mich.	15.3	13.8	4.0	10.0
Grand Rapids	14.8	13.8	4.0	9.7
Saginaw	16.3	14.8	4.0	9.3
Evansville, Ind.	17.1	15.6	5.0	†11.0
Indianapolis	17.3	15.8	5.0	†11.2
South Bend	17.6	16.1	5.0	†9.4
Fargo, N. Dak.	17.2	15.7	4.0	12.1
Minot	18.5	17.0	4.0	13.4
Huron, S. Dak.	17.5	16.0	5.0	11.4
Kans. City, Mo.*	14.9	13.4	4.0	9.8
St. Louis*	15.2	13.7	4.0	10.1
St. Joseph*	14.9	13.4	4.0	9.8
Wichita, Kans.	14.4	12.0	4.0	8.3

*State tax 2 cents, 1-cent city tax and 1-cent federal tax. †Does not include 4-cent state tax. ‡Does not include 3-cent state tax.

Exclusive of state general sales taxes.

Discounts to commercial consumers: On purchases per month off tank-wagon prices: 1,000 gallons or more, 1.5 cents off; minimum delivery 25 gallons.

Stanolax Fuel Oil in Chicago

Effective Dec. 7, 1936, f.o.b. Chicago tank-wagon prices: Range oil, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7.3 cents. Stanolax No. 1, 1-99 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and over, 7 cents. Stanolax furnace oil, 1-149 gallons, 7.8 cents; 150 gallons and over 7 cents; Stanolax A, 1-399 gallons, 5.75 cents; 400 gallons and over, 4.75 cents. Stanolax B, 1-799 gallons, 5.75 cents; 800 gallons and over, 4.75 cents.

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Atl'tic. City, N.J.	12.75	11.25	4.0	8.5
Newark	12.75	11.25	4.0	8.0
Annapolis, Md.	14.85	13.35	5.0	9.5
Baltimore	14.25	12.75	5.0	9.0
Cumberland	16.65	14.15	5.0	10.0
Wash'g'n, D. C.	12.5	11.0	3.0	9.5
Danville, Va.	16.95	14.45	6.0	12.9
Norfolk	15.75	13.25	6.0	11.5
Petersburg	16.05	13.55	6.0	11.7
Richmond	16.05	13.55	6.0	11.7
Roanoke	17.25	14.75	6.0	12.9
Charles'n, W. V.	17.05	14.55	6.0	12.6
Parkersburg	15.35	13.85	6.0	11.2
Wheeling	16.25	14.85	6.0	12.2
Charlotte, N. C.	18.65	16.15	7.0	12.6
Hickory	19.15	16.65	7.0	13.0
Mt. Airy	18.95	16.45	7.0	12.8
Raleigh	18.25	15.75	7.0	12.1
Salisbury	18.75	16.25	7.0	12.7
Charleston, S. C.	17.25	14.75	7.0	11.1
Columbia	18.25	15.75	7.0	12.1
Spartanburg	18.95	16.45	7.0	12.9

Price basis to commercial consumers, effective March 8, 1937, in Maryland, District of Columbia, and in Arlington and Fairfax counties in Virginia; and March 12 in New Jersey: To contract accounts purchasing at least one full compartment at time by hose connection, on yearly purchases: From 2,500 to 100,000 gallons, consumer tank-wagon price at time and place of delivery; 100,000 gallons per year, consumer tankcar price plus .5 cent per gallon. Consumer tank-wagon price generally will be equivalent to dealer tank-wagon price less .5 cent per gallon.

Effective May 15, 1937, in North and South Carolina, West Virginia and Virginia (except Arlington and Fairfax counties): Commercial consumers taking deliveries of 50 gallons (W. Va., 100 gallons) or more at one time will be billed at posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons (W. Va., 100 gallons) will be billed at 4 cents per gallon over posted consumer tank-wagon price. Generally the posted consumer tank-wagon price will be the equivalent to the dealer price less .5 cent per gallon.

Discount for kerosene, 1 cent off tank-wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except no discount in New Jersey.

Southern District

STANDARD OIL CO. OF KENTUCKY

	Gasoline Tank-wag.	Net dlr.	Inc. tax	Kero. tank wag
Atlanta, Ga.	21.0	18.0	7.0	*†14.0
Augusta	21.0	18.0	7.0	*14.0
Macon	21.0	18.0	7.0	*14.0
Savannah	19.5	16.5	7.0	*12.0
Birm'ham, Ala.	21.0	18.0	8.0	12.0
Mobile	21.0	18.0	9.0	†11.0
Montgomery	21.0	19.0	9.0	†13.0
Jackson, Miss.	19.5	16.5	7.0	*13.0
Vicksburg	19.5	16.5	7.0	*13.0
Jacks'ville, Fla.	22.5	17.5	8.0	†11.0
Miami	20.0	17.0	8.0	†12.5
Pensacola	22.0	19.0	9.0	12.0
Tampa	20.5	17.5	8.0	10.5
Lexington, Ky.	19.0	16.0	6.0	11.0
Covington	18.5	15.5	6.0	11.0
Louisville	19.0	16.0	6.0	10.5
Paducah	19.0	16.0	6.0	10.0

Price basis to tank-wagon consumers: Effective January 4, 1937, 3 cents per gallon below tank-wagon price. Kerosene prices in all states subject to 2 cents discount except in Kentucky where prices are net.

*Includes 1-cent state tax. †Subject to 2-cent discount.

Montgomery, Ala., has a county tax of 1 cent per gallon, and a city tax of 1 cent per gallon on gasoline, in addition to state tax; and 1 cent per gallon on kerosene. Mobile, Ala., has a city gasoline tax of 2 cents per gallon; Birmingham, Ala., has a city gasoline tax of 1 cent per gallon; Pensacola has a city gasoline tax of 1 cent.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Denver, Colo.	14.0	5.0	11.5
Grand Junction	19.0	5.0	15.0
Pueblo	13.0	5.0	10.5
Casper, Wyo.	17.0	5.0	11.5
Cheyenne	16.0	5.0	13.0
Butte, Mont.	19.5	6.0	15.5
Billings	19.5	6.0	13.0
Helena	19.5	6.0	15.5
Great Falls	19.5	6.0	15.5
Salt Lake City, Utah	18.0	5.0	16.0
Twin Falls, Ida.	21.0	6.0	18.0
Boise	21.5	6.0	18.0
Albuquerque, N. M.	17.5	*6.5	12.0

*Includes city tax of one-half cent.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline Tank-wag. con'r.	Di-vided dlr.	Inc. tax	Kero. tank-wag.
Ohio points	16.5	15.5	5.0	*13.0

*Includes state tax of 1 cent.

New York and New England

SOCONY-VACUUM OIL CO., INC.

	Gasoline Tank-wag.	Tank-car	Inc. tax	Kero. tank wag.
Albany, N. Y.	14.5	12.5	5.0	9.0
*Met. N. Y.:				
M'htt'n, Br'nx	14.0	12.5	5.0	8.75
Staten Island	14.0	12.5	5.0	8.75
Q'ns & Bklyn.	14.0	12.5	5.0	8.75
Buffalo	14.0	13.0	5.0	7.5
Rochester	15.0	13.2	5.0	8.5
Syracuse	14.5	13.1	5.0	9.0
Boston, Mass.	13.5	11.75	4.0	8.5
Portland, Me.	15.0	13.0	5.0	8.75
Manch'ter, N.H.	15.5		5.0	9.0
Burlington, Vt.	15.4	13.4	5.0	9.5

*Does not include 2 per cent city sales tax which is calculated on basis of net retail price exclusive of state and federal taxes. Metropolitan New York prices are undivided dealer prices; others are split dealer.

Price basis to undivided dealer: Posted dealer tank-wagon price less .5 cent. Price basis to commercial consumer: Effective Nov. 15, 1936, monthly purchases of 25,000 gallons and over, consumer tankcar prices at delivery point plus .5 cent per gallon; monthly purchases of 5,000 to 25,000 gallons, undivided dealer price at delivery point; monthly purchases under 5,000 gallons, pay divided dealer tank-wagon prices at delivery point.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
San Francisco	17.5	18.5	4.0	11.5
Los Angeles	17.0	18.0	4.0	10.0
Fresno, Calif.	18.5	19.5	4.0	12.5
Phoenix, Ariz.	21.5	22.5	6.0	*17.5
Reno, Nav.	20.5	21.5	5.0	13.5
Portland, Ore.	20.0	21.0	6.0	13.5
Seattle, Wash.	20.0	21.0	6.0	13.5
Spokane	22.5	24.0	6.0	16.0
Tacoma	20.0	21.0	6.0	13.5

*Includes 5-cent state tax.

Discounts to dealers: On gasoline, off tank-wagon price, to 100 per cent dealers, 3 cents; to split dealers, 2 cents. To commercial consumers: on tank-wagon price: on single deliveries of 40 gallons and over, advance quantity discount extended at time of delivery, 3 cents. Service station schedule applies on single deliveries less than 40 gallons. On kerosene in tankcar, transport truck and trailer delivery, 3 cents off tank-wagon price; plant deliveries to jobbers, 2.5 cents below tank-wagon.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline Tank wag.	Dlr.	Inc. tax	Kero. tank-wag.
Omaha	18.0	16.5	6.0	10.8
McCook	17.5	15.0	6.0	9.5
Norfolk	18.4	16.9	6.0	10.3
North Platte	18.8	16.9	6.0	11.2
Scotts Bluff	19.5	16.3	6.0	12.3

Discounts to commercial consumers for tank-wagon deliveries covered only by standard commercial consumers contract, effective Jan. 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
N. Orleans, La.	19.0	16.5	*10.0	†12.0
Baton Rouge	17.0	14.5	8.0	12.0
Alexandria	17.5	15.0	8.0	10.5
Lafayette	18.0	15.5	8.0	12.5
Lake Charles	18.0	15.5	8.0	12.5
Shreveport	16.5	14.0	8.0	9.5
Kn'xv'lle, Tenn.	20.0	17.5	8.0	14.0
Memphis	18.0	15.5	8.0	12.0
Chattanooga	19.5	17.0	8.0	13.5
Nashville	19.0	16.5	8.0	10.5
Bristol	19.0	17.75	8.0	14.5

*Includes 2-cent parish tax. †Includes 1-cent parish tax and 1-cent state tax.

Price basis to commercial consumers: Effective May 15, 1937, deliveries of 50 gallons or more in one delivery takes posted consumer tank-wagon price. Accounts taking deliveries of less than 50 gallons at one time pay posted consumer tank-wagon price plus 4 cents per gallon. Generally, the posted consumer tank-wagon price will be equivalent to the dealer price less .5 cent per gallon.

Louisiana kerosene prices include 1-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline Tank-wag. dlr.	Tank-car con'r.	Inc. tax	Kero. tank-wag.
Philadelphia, Pa.	13.75	12.25	5.0	10.0
Pittsburgh	15.0	13.0	5.0	10.5
Allentown	14.25	12.75	5.0	10.5
Erie	14.5	13.0	5.0	10.0
Scranton	14.5	13.0	5.0	10.5
Altoona	15.0	13.0	5.0	10.5
Dover, Del.	14.0	....	5.0	10.5
Wilmington	14.0	....	5.0	10.5
Springf'd, Mass.	14.0	....	4.0	8.0
Worcester	14.5	....	4.0	9.0
Hartford, Conn.	13.6	....	4.0	8.0
New Haven	13.5	....	4.0	8.0
Providence, R. I.	13.3	....	4.0	8.5

Price basis to undivided dealers, dealer tank-wagon price less .5 cent per gallon. Price basis to commercial consumers in Pennsylvania and Delaware, effective March 11, 1937: Consumers under contract using 100,000 gallons or more per year full compartment hose deliveries, tankcar plus .5 cent. Consumers under contract using less than 100,000 gallons per year compartment hose deliveries, undivided dealer price. Consumers under contract less than full compartment delivery, consumers not under contract, less than full compartment delivery, and consumers not under contract full compartment delivery, divided dealer price. Less than 25 gallons, tank-wagon delivery, 4 cents per gallon above undivided dealer price.

Oklahoma and Arkansas

CONTINENTAL OIL CO.

	Gasoline Dealer	Inc. tax	Kero. tank-wag.
Muskogee, Okla.	14.5	5.0	7.0
Oklahoma City	14.0	5.0	8.0
Tulsa	14.0	5.0	6.0
Ft. Smith, Ark.	14.25	5.0	8.0
Little Rock	17.25	7.5	9.5
Texarkana	14.0	5.0	8.5

Texas

	Gasoline Tank-wag.	Serv. sta.	Inc. tax	Kero. tank-wag.
Dallas, Tex.	14.0	18.0	5.0	8.0
Fort Worth	14.0	18.0	5.0	8.0
Houston	14.5	19.0	5.0	8.0
San Antonio	13.5	17.5	5.0	8.0

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank-wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax or 2 per cent retail occupational tax.

Prices f.o.b. Chicago. Each price subject to discount of 1 cent per gallon for 150-gallon lots if covered by contract.

Canada*

3-Star Imperial Gasoline
IMPERIAL OIL, LTD.

	Tank-wag.	Inc. tax	Kero. tank-wag.
Halifax, N. S.	24.5	10.0	18.5
St. John, N. B.	24.5	10.0	18.5
Montreal, Que.	21.0	6.0	17.5
Toronto, Ont.	22.0	6.0	17.0
Hamilton, Ont.	22.0	6.0	17.0
Winnipeg, Man.	27.5	7.0	20.7
Brandon, Man.	28.1	7.0	22.3
Regina, Sask.	27.0	7.0	22.0
Saskatoon, Sask.	29.8	7.0	24.9
Edmonton, Alta.	26.5	7.0	21.5
Calgary, Alta.	24.0	7.0	19.0
Vancouver, B. C.	23.0	7.0	23.0

*Imperial gallon used in Canada.

Divided dealers pay tank-wagon price. Discount to undivided dealers, 1 cent below tank-wagon price. In maritime provinces both divided and undivided dealers pay tank-wagon price.

Retail Price Changes

Continental Oil Co. April 25 reduced tank-wagon kerosene 2.5 cents at Billings.

Standard Oil Co. of California April 11 advanced tank-wagon kerosene .5 cent at Phoenix and Reno; April 28 advanced station gasoline .5 cent at Spokane.

Standard Oil Co. of Nebraska April 23 reduced tank-wagon gasoline .3 cent and tank-wagon kerosene .8 cent at McCook; April 26 reduced dealer gasoline .3 cent at McCook.

Gulf Refining Files Answer In Reclaimed Oil Case

WASHINGTON, D. C., May 2.—Vigorous opposition to the assertion by the Federal Trades Commission that many reclaimed motor oils are as good as virgin lubricating oils is made by Gulf Refining Co., Pittsburgh, Pa., in its answer to the commission's complaint. The company admits it did send circulars to some of its agents urging them not to sell crank-case drainings to oil reclaimers, but declares these were isolated incidents and the company has no intention of repeating them. On the main charge that it unfairly disparaged reclaimed oil, the Gulf company reiterated its contention that much reclaimed lubricating oil on the market is inferior to virgin oil and that many persons in the reclaiming business are misrepresenting the quality of their product.

Prices of Refined Products

All quotations f.o.b. plant in cars for interstate or export movement except as otherwise noted

Prices as of May 3, 1938

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

OKLAHOMA (Group 3)—

U. S. Motor grades:		
62 oct. and below	.04⅛	.04¼
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)		.05¼
60-62 400 grades:		
62 oct. and below	.04⅛	.04¼
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)		.05¼
64-66 375	.04⅜	.04⅞
68-70 360	.05	.05⅛

NORTH TEXAS—

U. S. Motor grades:		
62 octane and below	.04⅛	.04¼
63-66 octane	.04½	.04⅝
67-69 octane	.04⅞	.05
70-72 octane (regular)		.05¼
60-62 400	.04⅜	.04½
64-66 375	.04¾	.04⅞

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)

U. S. Motor grades:		
62 octane and below	.04⅜	.04½
63-66 octane	.04¾	.05
67-69 octane	.05	.05⅛
70-72 octane (regular)	.05⅜	.05⅝

ARKANSAS (Ark., N. La., Miss. del.)—

U. S. Motor grades:		
62 octane and below	.04½	.04⅝
67-69 octane	.05	.05⅛
70-72 octane (regular)	.05½	.05⅝

CHICAGO (Based on Group 3)—

U. S. Motor grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05½
60-62 400 grades:		
62 octane and below	.04¼	.04⅜
63-66 octane	.04⅝	.04¾
67-69 octane	.04⅞	.05
70-72 octane (regular)	.05¼	.05½
64-66 375	.04¾	.05
68-70 360	.05	.05¼

PENNSYLVANIA (Inland refineries)—

58-60 U. S. Motor:		
Below 60 octane	.05¼	.05⅜
65 octane	.06¼	.06½
68-70 octane	.06⅞	.07⅛

CALIFORNIA (domestic movement)—

54-58 U. S. Motor	.06¾	.08¼
58-60 400, 65 oct. and higher	.08½	.09¼

EAST COAST (Domestic)—

U. S. Motor, 60-64.9 octane:		
New York (Bayonne)	.06¼	.06½
Philadelphia	.06¼	.06½
Boston	.06½	.06¾
Baltimore	.06½	.06¾
Charleston, S. C.	.07	.07¼
U. S. Motor, 65 and above:		
*New York (Bayonne)	.06½	.07
Philadelphia	.06½	.07
Boston	.06¾	.07
Baltimore	.07	.07¼
Charleston, S. C.	.07¼	.07½

*All grades of gasoline one-eighth to one-fourth cent less for barge shipments. New York harbor prices are for New York and New England delivery. Prices for New Jersey delivery one-fourth cent lower.

GULF COAST (domestic)—

U. S. Motor grades:		
Below 60 octane	.05	.05¼
60-64.9	.05¼	.05⅜
65 octane and higher	.05½	.05¾

Naphtha

PENNSYLVANIA (Inland refineries)—

52-56 450 (blending)	.04¾	.05

Natural Gasoline

OKLAHOMA (Group 3)—

Grade 26-70		.02½
Grade 18-55	.03	.03¼

NORTH TEXAS—

Grade 26-70		.02⅝
Grade 18-55	.03⅛	.03¼

CALIFORNIA—

75-85 375-390	.06½	.07

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

Grade 26-70	.03

Tractor Fuel

OKLAHOMA (Group 3)—

40-42 gr., 315-325 i.b.p., 110 flash, 540-550 e.p.	.04	.04⅛
41-43 gr., 300-520 i.b.p., 110-125 flash, 500-520 e.p.	.04⅛	.04¼
46-48 gr., 210-230 i.b.p., 480 max. e.p.	.04½	.04⅝

Kerosene

(All kerosene water white)

OKLAHOMA (Group 3)—

41-43	.04⅛	.04¼
42-44	.04¼	.04⅜

NORTH TEXAS—

41-43	.04⅛	.04¼

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

41-43	.04⅜	.04½

ARKANSAS (Ark., N. La., Miss. del.)—

41-43	.04½	.04⅝

PENNSYLVANIA (Inland refineries)—

45	.05	.05⅛
46	.05⅛	.05¼
47	.05¼	.05⅜

CHICAGO (Based on Group 3)—

41-43	.04¼	.04⅜
42-44	.04⅜	.04⅝

CALIFORNIA (Pac. Coast market)—

38-43 high burning test	.05	.06

NEW YORK (Bayonne, N. J.)—

41-43		.05¾

***GULF COAST (domestic)—**

41-43	.04⅝	.04¾

*Barge price one-eighth cent lower.

Furnace Oil

OKLAHOMA (Group 3)—

Range oil	.03⅞	.04
No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾
No. 2 straw, 32-36	.03⅛	.03¼
No. 2 dark, 32-36		.03
No. 3 zero to 15, 28-32	.02⅞	.03
No. 3, 15 and above, 28-32	.02¾	.02⅞

NORTH TEXAS—

No. 1 prime white, 38-42	.03¾	.03⅞
No. 1 straw, 38-40	.03⅝	.03¾

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

No. 2, 32-36	.03½	.03⅝

ARKANSAS (Ark., N. La., Miss. del.)—

No. 2, 32-36		.03⅝

CHICAGO (Based on Group 3)—

Range oil	.03⅞	.04⅛
No. 1 prime white, 38-40	.03¾	.04
No. 1 straw, 38-40	.03⅝	.03⅞
No. 2 straw, 32-36	.03⅜	.03⅝
No. 2 dark, 32-36	.03¼	.03⅝
No. 3, zero to 15, 28-32	.03¼	.03⅜
No. 3, 15 and above, 28-32	.02⅞	.03

NEW YORK (Bayonne, N. J.)—

*No. 1		.05¾
*No. 2		.04¾
*No. 4		.04¾

*Barge deliveries one-eighth to one-fourth cent under above tankcar price.

Gas Oil and Fuel Oil

(Gas oil per gal.; fuel oil per bbl.)

OKLAHOMA (Group 3)—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.05	1.10
No. 4, 15 and above, 24-28	.85	.90
No. 5, low cold test, 18-22	.72½	.77½
Below 18 fuel oil, industrial	.55	.60

NORTH TEXAS—

U.G.I. gas oil	.02⅝	.02¾
No. 4, low cold test, 24-28	1.05	1.10
No. 5, low cold test, 18-22	.72½	.77½
Below 18 fuel oil, industrial	.55	.60

NORTH LOUISIANA (Ark., N. La. and Miss. delivery)—

10-14 fuel oil, industrial	.80	.85

CHICAGO (Based on Group 3)—

U.G.I. gas oil	.02⅝	.02⅞
No. 4, low cold test, 24-28	1.05	1.15
No. 4, 15 and above, 24-28	.85	.95
No. 5, low cold test, 18-22	.72½	.77½
No. 5, 15 and above, 18-22	.60	.70
No. 6, low cold test, 10-16	.60	.70
No. 6, 15 and above, 10-16	.35	.47½

PENNSYLVANIA (Inland refineries)—

36-40	.03⅝	.04

CALIFORNIA

Los Angeles:		
30-40 gas oil, per bbl.	1.25	1.50
24 plus diesel, per bbl.	1.20	1.50
24 plus diesel (bunkers)	1.30	1.55
12-16 (bunkers at tidewater)	.90	1.00
10-16 (cargo lots)	.80	1.00
12-17 (tankcars)	.60	1.00
10-17 (high sulfur)	.55	.95
San Joaquin Valley:		
10-18 (tankcars)	.60	.85
24 plus diesel, per bbl.	1.30	1.50
San Francisco:		
24 plus diesel, per bbl.	1.45	1.55
24 plus diesel (bunkers)	1.55	1.65
10-16 (bunkers)	1.00	1.05

GULF COAST—

28-30 gas oil	.03¼	.03½
28-30 diesel (bunkers)		1.75
Bunkers (bulk cargoes)	.72	.75
Bunker C (bunkers)		.80

NEW YORK (Bayonne, N. J.)—

27 plus, gas oil		.04¾
28-30 diesel (lighterage 6¼c per bbl.)		1.85
28-30 diesel (tankcars)	.04¾	.05
Bunker C (to ocean-going ships in N. Y. harbor)		1.05
Industrial fuel (tankcars)	.04	.04¼

Lighterage charge 5c bbl. additional.

Bright and Steam Refined

OKLAHOMA (Group 3)—

Bright Stocks:		
190-200 D, 15-25		.19
150-160 D, 0-10		.16
150-160 D, 15-25		.14½
150-160 E, 15-25		.13½
100-110 D, 0-10		.14½
Steam refined:		
631 green (treated)		.13½
600 dark green (untreated)		.05

PENNSYLVANIA—

Bright Stocks (Pennsylvania Grade No. 8 color, 140-150 at 210, 545-550 flash):		
10 pour test	.16	.16½
15 pour test	.15	.15½
20 pour test	.14	.14½
25 pour test	.13	.13½
Steam refined:		
600	.08½	.09
650	.10½	.11½
600 Pennsylvania flash	.11	.13
630 flash	.14	.15
600 Warren E filtered	.13	.14

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.G.A.)

OKLAHOMA (Group 3)—

Zero to 10 Cold Test:		
150-3		.09
180-3		.10
180-4		.09½
200-3		.10½
200-4		.10
250-3		.11½
250-4		.11
280-3		.12½
280-4		.12
300-3½		.13
400-3½		.14
100-2½ paraffin oil		.06
15-20 Cold Test:		
200-3		.10
200-4		.09½
250-3		.11
250-4		.10½
280-3		.12
280-4		.11½

GULF COAST—

Pale Oils:		
200-3	.07	.07¼
300-3	.07½	.07⅝
500-3½	.08½	.08¾
750-3½	.08⅝	.09¼
1,200-3½	.09½	.09¾
1,500-4	.09¾	.10
Red Oils:		
200-5-6	.07¼	.07½
300-5-6	.07¼	.07½
500-5-6	.08	.08½
750	.08¾	.09
1,200-5-6	.09¼	.09½

CALIFORNIA (moving to dom. market)—

Pale Oils:		
100-2½-3	.07¼	.08
200-2½-3	.07¼	.08
300-2½-3	.07¼	.08
400-3-4	.07¼	.08
450-3-4	.07¼	.08
550-3-4	.09	.11
600-3-4	.09	.11
Red Oils:		
200-4-5	.07¼	.08
300-5-6	.07¼	.08
350-5-6	.09¼	.11½
400-5-6	.09¼	.11½
450-5-6	.09¼	.11½
500-5-6	.09¼	.11½
600-5-6½	.09¼	.11½
700-6½ plus	.09¾	.11½
750-6½ plus	.09¾	.11½
900-6½ plus	.09¼	.11½

PENNSYLVANIA—

150 vis. at 70° F. color, 400-405 flash:		
Zero pour test	.16	.16½
10 pour test	.15	.15½
15 pour test	.14½	.15
25 pour test	.13½	.14
180 vis. at 70° F., 3 color:		
25 pour test	.15	.15½
200 vis. at 70° F., 3 color:		
Zero pour test	.17½	.18
10 pour test	.16½	.17
15 pour test	.16	.16½
25 pour test	.15	.15½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—

124-126 (a.m.p.) w.c. scale	.02⅛	.02¼

PENNSYLVANIA (Inland refineries)—

122-124 (a.m.p.) w.c. scale	.0190	.0200
124-126 (a.m.p.) w.c. scale	.0190	.0200

NEW YORK—

Wax in bags fully refined:	
122-125 (a.m.p.) wax	.0420
125-127 (a.m.p.) wax	.0435
128-130 (a.m.p.) wax	.0445
130-132 (a.m.p.) wax	.0455
133-135 (a.m.p.) wax	.0500
135-137 (a.m.p.) wax	.0515
124-126 (a.m.p.) w.s.	.0185
124-126 (a.m.p.) y.s.	.0185

Petrolatum in barrels, carload lots:		
Dark green	.02	.02⅛
Amber	.02⅜	.02½
Extra amber	.02⅝	.02¾
Lily white	.05⅛	.05¼
Snow white	.06⅛	.06¼
Cream	.04⅛	.04¼

Export Prices

GASOLINE

GULF COAST—

U. S. Motor	.04¾	.04⅞
60-62 400	.04¾	.04⅞
61-63 390	.04⅞	.05
64-66 375	.04⅞	.05

LOS ANGELES—

U. S. Motor grades:		
55-65 octane	.05¼	.05½
65-69 octane		.05¾
Above 69 octane		.06¼

KEROSENE

GULF COAST—

41-43 prime white	.04⅜	.04⅝
41-43 water white	.04½	.04¾
44 water white		.04¾

LOS ANGELES—

41-43 water white	.05	.05¼

LUBRICANTS

(Pennsylvania Grade)

NEW YORK (f.o.s. in bbls.)—

Cylinder Stocks:		
600 Warren E	.14½	.15
600 S.R. unfiltered	.15½	.16
630 S.R. unfiltered	.17½	.18
600 flash S.R.	.17½	.18
630 flash, S.R.	.21	.21½
Bright Stocks:		
8 color	.21½	.22
6½ plus color in dilution		.21

NEUTRAL OIL

200-3 color	.23½	.24
150-3 color	.21½	.22

PARAFFIN WAX

NEW YORK (prices per pound)—

123-126 a.m.p.		.0375
125-127 a.m.p.		.0387
128-130 a.m.p.		.0412
133-135 a.m.p.		.0437
135-137 a.m.p.		.0455
Crude Scale:		
124-126 w.s.	.0185	.0200
124-126 y.s.	.0185	.0200

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

(Effective January 28, 1937)

East Texas (May 22, 1937)*	$1.35
Van, Tex.†	1.10
Camp Hill, Tex.	1.27
Cass County, Tex.‡	1.25
Talco	.73
Altus and Tipton, Okla.§	1.20
Other fields (see gravity table).	

*All companies. †Humble Oil & Refining Co.; Pure Oil Co. ‡Texas Co. §Gulf Oil Co. Talco by Humble Oil & Refining Co.

North Louisiana and Arkansas

Smackover, all grades	$ .90
Tullos and Urania	1.02
El Dorado East field	.90
Union County, Ark.	.90
Ouachita County, Ark.	.90
Lisbon, La. (Dec. 13, 1937)*	.98

*Caddo Crude Oil Purchasing Co.

Gulf Coast

(Effective January 28, 1937)

Choctaw and Darrow, La. See note below	
Clay Creek, Tex.	$1.00
Garden Island, La.	1.37
Cleveland, Tex.	1.27
Hardin, Tex.	1.15
Lafitte, La.	1.24
Livingston, Tex.	1.27
Welah, La.	.98
Tepetate (La.) (Jan. 28, 1937)	1.24

Duval, Jim Hogg, Webb and Zapata counties, Texas, and Heyser and Placedo fields take Mirando gravity prices. Jennings, La., 5 cents lower than Gulf Coast prices on each degree. Segno, Texas, takes Gulf Refining Co.'s Gulf Coast prices. Choctaw and Darrow, Louisiana, posted for first time by Standard Oil Co. of Louisiana, start below 21 degrees at 90 cents, with 3-cent differential up to 25 gravity, then 2-cent differential up to 40 and above, $1.36. Effective October 1, 1937, Stanolind Oil & Gas Co. in Evangeline, La., pays 92 cents for below 20 gravity, adding 2 cents for each degree upward to 40 and over, at $1.34.

Rocky Mountain States

(Effective January 28, 1937)

Iles, Colo., light*	$1.18
Iles, Colo., heavy*	1.12
Greybull, Wyo.*	1.30
Torchlight, Wyo.*	1.30
Grass Creek, Wyo., light*†	1.30
Grass Creek, Wyo., heavy (Nov. 4, 1936)*†	.62
Hamilton Dome, Wyo., (Jan. 1, 1937)*	.67
Elk Basin, Wyo., light*†	1.30
Frannie, Wyo., heavy*	.62
Frannie, Wyo., light	.70
Hogback, N. M. (Jan. 28, 1937)*	1.33
Salt Creek, Dutton Creek and Midway, Wyo., take Stanolind's Oklahoma prices on a gravity basis.	
Big Muddy, Wyo.†‡	1.23
Rock Creek, Wyo.†	1.20½
Lea County, N. M. (see West Texas gravity table).	
Artesia, N. M. (Jan. 2, 1937)‡	.90
Maljamar, N. M. (Jan. 28,1937)‡	.90
Canon City and Florence, Colo.	1.10
Lance Creek, Wyo.	.97
Lander, Wyo. (Jan. 1, 1938)§	.51¼
Sunburst, Mont. (Nov. 16, 1937)†	.90
Cat Creek, Mont. (Jan. 1, 1938)‡	$1.30
Garland, Wyo. (Jan. 1, 1937)†	.50

*Stanolind Oil & Gas Co. †Ohio Oil Co. ‡Continental Oil Co. Texas Co. (April 1, 1938). §Hudson Oil Co.

Middle Western States

OHIO OIL CO.
(Effective January 28, 1937)

Lima	$1.00
Illinois	1.35
Princeton, Ind.	1.35
Midland, Mich. (Jan. 5, 1938)*	1.12
West Branch, Mich. (Dec. 29, 1937)†	.80
Buckeye (Jan. 8, 1938)	1.09½
Arenac, Mich. (Dec. 29, 1937)†	.80
Muskegon, Mich.	1.00
Eastern Kentucky:	
Big Sandy River	1.42
Kentucky River	1.50
Western Kentucky	1.40

*Posted by Pure Oil Co.
†McClanahan P. L. and Simrall.
Midland, Mich., price posted by Simrall Corp. and Pure Oil Co. includes Greendale, Porter, Beaverton, Crystal and equal grades. West Branch and Arenac by Simrall Corp. Eastern Kentucky crude purchased by Ashland Refining Co., Ashland, Ky. Buckeye posted by Simrall Corp. and Pure Oil Co.

West Texas

See gravity table.

Pecos County*	$ .91
Pecos shallow†	.81

*Shell Petroleum Corp., Gulf Pipe Line Co. and Humble Oil & Refining Co. †Shell Petroleum Corp.

Southwest Texas

(Effective January 28, 1937)

Pettus	$1.37
Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.09
Lytton Springs	1.12
Luling	1.00

Saxet and Taft take same gravity table as Gulf Coast.

Eastern States

TIDE WATER ASSOCIATED OIL CO.
(Effective March 7, 1938)

Bradford, Pa.	$2.05
Allegany, N. Y.	2.05

SOUTH PENN OIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines (Bradford field)	2.05
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.71
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.65
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.55
Corning Grade Oil in Buckeye Pipe Line Co.'s lines	1.27

PENNZOIL CO.
(Effective March 7, 1938)

Pennsylvania Grade Oil in National Transit Lines:	
Group A	1.98
Includes, Cochran, Franklin, Hamilton and Doolittle districts.	
Group B	1.97
Includes Tidioute district.	
Group C	1.96
Includes Turkey and Tidioute districts.	
Group D	1.98
Includes Bear Creek and Porkey districts.	
Group E	1.93
Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kenerdell, Emlenton, Tiona, Lacey and Kinzua districts.	

PURE OIL CO.
(Effective March 7, 1938)

Cabin Creek, W. Va.	$1.85
Bradford Hollow, W. Va.	1.85
Kelly Creek, W. Va.	1.85

Canada

Ontario (Sept. 9, 1933)*

Petrolia	$2.10
Oil Springs	2.17

TURNER VALLEY NAPHTHAS AND CRUDE OIL
(January 5, 1938, by Imperial Oil, Ltd.)

Clear naphtha and discolored naphtha, 65 gravity and higher	$2.14
Discolored naphtha and crude oil, 40-40.9 gravity	1.14
Increasing 2 cents for each degree gravity with top price for 64-64.9 gravity	1.62

These prices f.o.b. producers field tankage.

*Imperial Oil, Ltd.

Mexico

Heavy Mexican crude	*$.85

*In U. S. currency, f.o.b. ship, based on February spot market transactions.

Crude Oil Price Changes

Effective May 1 Stanolind Oil & Gas Co. posted a gravity scale of prices in the West Beaumont field in Jefferson County, Texas, beginning with below 21 gravity at 95 cents and ending with 41 and above at $1.41. The prices are the same as paid by Humble Oil & Refining Co. for Gulf Coast crude (see column 11 under Crude Prices by Gravities on this page).

Crude Prices by Gravities

	Oklahoma-Kansas	Oklahoma-Kansas	North and Central Texas	East Central Texas (Mexia district)	North Louisiana-Arkansas	Gray County, Texas	Hutchinson-Carson counties, Texas	Rodessa, Louisiana-Texas and Panola County, Texas	Conroe, Tomball, Raccoon Bend, (Deep) Satsuma	Gulf Coast	Gulf Coast	Lea County, N. Mex. West Texas except Pecos County	Mirando district, Texas	Marion County, Texas	Refugio, Greta, Saxet, Taft, Texas	Anahuac, Flour Bluff, Dickson, Turtle Bay	White Castle, Louisiana	Iowa, Louisiana	Cayuga, Texas
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Bel. 18	....	....	....	....	....	....	....	....	....	$ .95	....	....	....	....	....	....	....	$ .90	....
18-18.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	....	.92	....
19-19.9	....	....	....	....	....	....	....	....	....	.95	....	....	....	....	....	....	.94	.94	....
20-20.9	....	....	....	....	....	....	....	....	....	.95	$ .95	....	$ .96	....	$1.01	....	.96	.96	....
21-21.9	....	....	....	....	....	....	....	....	....	.98	.98	....	.98	....	1.03	....	.98	.98	....
22-22.9	....	....	....	....	....	....	....	....	....	1.01	1.01	....	1.00	....	1.05	....	1.01	1.01	....
23-23.9	....	....	....	....	....	....	....	....	....	1.04	1.04	....	1.02	....	1.07	....	1.04	1.04	....
24-24.9	....	....	....	....	....	....	....	....	....	1.07	1.07	....	1.04	....	1.09	....	1.07	1.07	....
Bel. 25	....	$ .98	....	....	$ .90	....	....	$ .93	....	....	....	....	....	$ .90	....	....	....	....	$ .88
25-25.9	....	1.00	....	....	.92	....	....	.95	....	1.10	1.10	$ .78	1.06	.92	1.11	....	1.10	1.10	.90
26-26.9	....	1.02	....	....	.94	....	....	.97	....	1.13	1.13	.80	1.08	.94	1.13	....	1.13	1.13	.92
27-27.9	....	1.04	....	....	.96	....	....	.99	....	1.15	1.15	.82	1.10	.96	1.15	....	1.15	1.15	.94
28-28.9	....	1.06	....	....	.98	....	....	1.01	....	1.17	1.17	.84	1.12	.98	1.17	....	1.17	1.17	.96
Bel. 29	$1.06	....	$ .96	$1.03	....	....	....	....	$1.20	....	....	....	....	....	....	....	....	....	....
29-29.9	1.08	1.08	.98	1.05	1.00	....	....	1.03	1.22	1.19	1.19	.86	1.14	1.00	1.19	....	1.19	1.19	.98
30-30.9	1.10	1.10	1.00	1.07	1.02	....	....	1.05	1.24	1.21	1.21	.88	1.16	1.02	1.21	$1.16	1.21	1.21	1.00
31-31.9	1.12	1.12	1.02	1.09	1.04	....	....	1.07	1.26	1.23	1.23	.90	1.18	1.04	1.23	1.18	1.23	1.23	1.02
32-32.9	1.14	1.14	1.04	1.11	1.06	....	....	1.09	1.28	1.25	1.25	.92	1.20	1.06	1.25	1.20	1.25	1.25	1.04
33-33.9	1.16	1.16	1.06	1.13	1.08	....	....	1.11	1.30	1.27	1.27	.94	1.22	1.08	1.27	1.22	1.27	1.27	1.06
34-34.9	1.18	1.18	1.08	1.15	1.10	....	....	1.13	1.32	1.29	1.29	.96	1.24	1.10	1.29	1.24	1.29	1.29	1.08
Bel. 35	....	....	....	....	....	$ .96	$ .91	....	....	....	....	....	....	....	....	....	....	....	....
35-35.9	1.20	1.20	1.10	1.17	1.12	.98	.93	1.15	1.34	....	1.31	.98	1.26	1.12	1.31	1.26	1.29	1.29	....
36-36.9	1.22	1.22	1.12	1.19	1.14	1.00	.95	1.17	1.36	....	1.33	1.00	1.28	1.14	1.33	1.28	1.29	1.29	....
37-37.9	1.24	1.24	1.14	1.21	1.16	1.02	.97	1.19	1.38	....	1.35	1.02	1.30	1.16	1.35	1.30	1.29	1.29	....
38-38.9	1.26	1.26	1.16	1.23	1.18	1.04	.99	1.21	1.40	....	1.37	1.04	1.32	1.18	1.37	1.32	1.29	1.29	....
39-39.9	1.28	1.28	1.18	1.25	1.20	1.06	1.01	1.23	1.42	....	1.39	1.06	1.34	1.20	1.39	1.34	1.29	1.29	....
40,over	1.30	1.30	1.20	1.27	1.22	1.08	1.03	1.25	1.44	....	1.41	1.08	1.36	1.22	1.41	1.36	1.29	1.29	....

Column 1—Companies posting are Barnsdall, Bell, Champ'in, Continental, Cushing, Derby, Bay, Eason, El Dorado, Cities Service, Falcon, Globe, Gulf, Johnson, Kanotex, National, Phillips, White Eagle, Stanolind, Sunray, Texas, Sun, Vickers and Wilcox.
Column 2—Anderson & Prichard, Carter, Cosco, Deep Rock, Magnolia, Mid-Continent, Pure, Rock Island, Shell, Sinclair, Skelly and Tide Water.
Column 3—All purchasers.
Column 4—Humble Oil & Refining Co. and Sinclair Oil Purchasing Co.
Columns 5, 6, 7 and 8—All purchasers.
Column 9—Humble Oil & Refining Co. and Sun Oil Co. Tide Water Oil Co.'s schedule starts at 35 degrees, $1.34 with 2-cent spread up to 40 and over at $1.44. (Raccoon Bend prices are for deep sand oil.)
Column 10—The Texas Co. (Gulf Refining Co. pays same prices up to and including 34 gravity, but continues its 2-cent spread up to 40 and over at $1.41.)
Column 11—Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Sun Oil Co.
Column 12—All purchasers.
Column 13—All purchasers (effective July 6, 1937).
Column 14—Magnolia Petroleum Co.
Column 15—Humble Oil & Refining Co. (effective July 6, 1937).
Column 16—Humble Oil & Refining Co.
Columns 17 and 18—Shell Petroleum Corp.
Column 19—Tide Water Oil Co.

Rocky Mountain Runs

Production estimates for week ended April 30:

WYOMING

	Bbls.
Salt Creek	16,000
Big Muddy	1,280
Badger Basin	190
Black Mountain	100
Dallas Derby	580
Frannie	1,200
Garland	2,180
Hudson	300
LaBarge	810
Lance Creek	10,730
Lost Soldier	1,410
Medicine Bow	3,180
Mule Creek	140
Oregon Basin	1,850
Osage	910
Quealy dome	690
Rock River	2,240
South Casper	490
Poison Spider	280
Wertz	700
Miscellaneous	370
Total Wyoming	45,630

MONTANA

Cat Creek	500
Cut Bank	7,410
Dry Creek	1,620
Kevin-Sunburst	3,200
Pondera	1,160
Total Montana	13,890

COLORADO

Florence	130
Fort Collins and Wellington	320
Iles dome	2,630
Moffat	270
Orchard	40
Rangely	90
Tow Creek	150
Price	10
Total Colorado	3,640

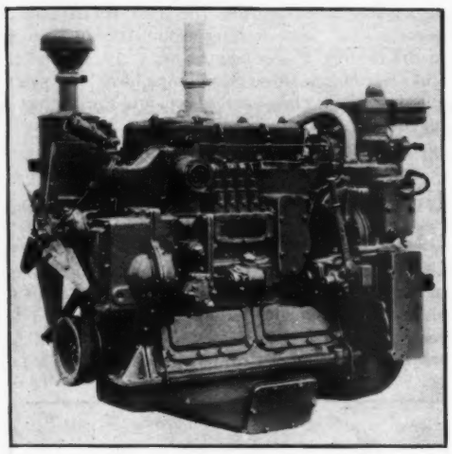
NEW MEXICO

Cooper	5,170
Eaves	960
Eunice	26,570
Hardy	1,850
Hobbs	14,970
Jal	1,260
Langlie	3,650
Lynch	620
Lynn	820
Mattix	2,880
Monument	27,910
North Lynch	50
Penrose	5,420
Rhoades	90
Skelly	1,950
South Eunice	2,870
Vacuum	1,220
Artesia-Maljamar	6,500
Getty	200
Hogback	200
Rattlesnake	760
Table Mesa	90
Total New Mexico	106,010
Total Rocky Mountain region	169,170

New or Improved Equipment

Diesel for Smaller Power User Is Introduced by Caterpillar

Offering an industrial engine for the smaller power user, Caterpillar Tractor Co., Peoria, Ill., has added the diesel D3400 model to its line. The new engine is a four-cylinder model with 3¾-inch bore and 5-inch stroke. It develops 33 horsepower at 1,525 governed r.p.m. The engine is generally similar to other "Caterpillar" diesels, featuring the four-stroke cycle, valve-in-head, water-cooled design, with solid fuel injection into precombustion chambers.



In construction work the engine is the proper size for powering smaller portable equipment, three-eighths yard draglines and shovels, and smaller industrial locomotives. Connected to a 15-kw. generator, it will provide smooth, even power for all-night service stations, industrial camps, etc. It is also well suited for irrigation work and other pumping jobs within its capacity.

Unusually simple in design, the engine contains only three operating adjustments, the valves, water-pump, and fan. Fuel-injection pumps and valves are factory-set and require no adjustment on the job. Seals and air-cleaners insure ample protection.

New Simplomatic Cathead Can Be Dismantled by Drillers

The American Simplomatic cathead is the newest product offered by American Iron and Machine Works Co., Oklahoma City and Houston. Although adapted to any type of drawworks, it is specially suitable for drawworks having a fast line shaft, the manufacturers say.

The Simplomatic is said to be built of the finest materials available, to withstand strain far in excess of anything to which it actually will be subjected. It is designed to reduce to a minimum metallic shocks or jars by lightening the engaging member to which the jerk-line is attached.

Once the cathead is installed, the manufacturers say, it can be completely dismantled and worn parts replaced or repaired at the rig by the drilling crew. Dismantling is done without removing the spool from the line shaft, effecting a saving in time and repair bills.

Bulletins, Booklets and Other Literature for the Trade

"Pressure Lubrication Without Special Fittings" is the title of an attractive folder which illustrates and describes the Acco-Morrow pressure lubricator, recently announced by American Chain & Cable Co., Inc., York, Pa.

A 32-page bulletin, "Bailey Boiler Meters," containing an analysis of 7,000 combustion tests made during the past 12 years on all types and sizes of boilers including a full range of fuels and methods of firing, has just been published by Bailey Meter Co., Cleveland, Ohio.

The Brown Instrument Co., Philadelphia, Pa., has published a new folder on the Brown pneumatic remote transmission system, developed for remote transmission of measurement and control in hazardous atmospheres, where the use of electrical transmission is not permissible.

Hunt Tool Co., 1945 Saint Bernard Street, Houston, Tex., has issued a four-page folder on the Reagan improved low-pressure gas burner, manufactured and distributed by this company.

American Lubricator Co., First National Bank Building, Dallas, Tex., has off the press a folder covering details of the new Standard force- and sight-feed chemical injector, high-pressure type, for oil-field service. The method of pumping chemical into the oil line automatically, the driving mechanism, the chemical reservoir, and other important features are explained.

A folder attractively printed in color and illustrated with action photographs showing methods of getting quick, accurate adjustments of mechanical parts in the oil industry has been made available by Laminated Shim Co., Long Island City, N. Y.

The Lincoln Shield-Arc S.A.E. welder, diesel-engine-driven model, is the subject of a four-page bulletin prepared by Lincoln Electric Co., Cleveland, Ohio.

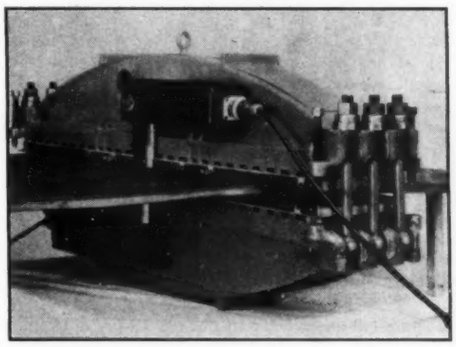
The April issue of Nickel Steel Topics, published by the International Nickel Co., 67 Wall Street, New York, contains among its articles two of particular interest to oil men, "Nickel Steels Aid the Oil Industry" and "High-Strength Oil Well Chain."

Detailed information concerning the new Type FM magneto will be found in bulletin RV 45, available upon request from the Magneto Division, Fairbanks, Morse & Co., Beloit, Wis.

A 32-page bulletin which illustrates and describes the new Bucyrus-Erie speedlined 29-B one-yard excavator has been published by the Bucyrus-Erie Co., South Milwaukee, Wis.

New Type Vulcanizer for Belts Put on Market by Goodrich

A new light-weight vulcanizer for vulcanizing belts up to 60 inches in width has been introduced by the B. F. Goodrich Co., Akron, Ohio. It is designated as the 48-60 combination vulcanizer, weighs only 1,650 pounds, and has a total wattage of 5,000 watts. It is similar in appearance to the Goodrich double-platen, water-cooled type, except that it has only three hinged bolts at each side instead of six. It is not made on the bias, but is rectangular. The platens are 65 inches wide and 12 inches long. This makes it possible to place the vulcanizer at a 10-degree angle on a 60-inch belt, at a 22-degree angle on a 54-inch belt, and a 30-degree angle on a 48-inch belt.



Two advantages are said to be gained by placing the vulcanizer at less than a right angle to the edges of the belt. First, any slight inequalities on the surface along the margin of the vulcanized portion will pass over the pulleys at an angle instead of straight across, and this gives much longer life to the splice. Second, placing the vulcanizer as nearly as possible parallel with the splice angle reduces the number of heats necessary to complete the splice. The vulcanizer can be furnished for either 110 or 220 volts, but no one machine is adaptable to both voltages.

D. C. Norcross Dies in California

D. C. Norcross, well known as president and general manager of the Petroleum Rectifying Co. of California, died suddenly at his home at Bel Air, Calif., after a prolonged illness. Mr. Norcross, a native of California, was one of the original group of organizers of the Petroleum Rectifying Co. of California in 1911, serving as president until the latter part of 1937 when he retired from active service and became honorary president. He traveled extensively throughout this and foreign countries in connection with his work. At the time of his death Mr. Norcross was the oldest member of the company in point of service, having devoted 26 years to continuous activity as an executive.

Goodrich Sales Head Dies

Clarence E. Cook, 58, general sales manager of mechanical goods for the B. F. Goodrich Co., Akron, Ohio, died there recently. He started as an office boy with Goodrich at the age of 16.

Speed-Changer Unit Adapted to Wide Variety of Layouts

The Texrope division, Allis-Chalmers Manufacturing Co., Milwaukee, Wis., has put on the market a new speed-changer unit which utilizes the principle of that company's multigroove Vari-Pitch sheaves. The new unit is ruggedly constructed and compact. Totally enclosed, designed

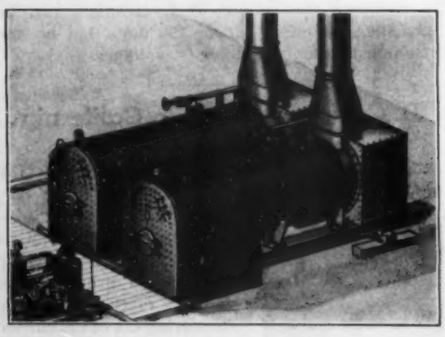
with double-shaft extensions and driven from a standard motor, the unit provides flexibility that makes it adaptable to a wide variety of layouts to suit the individual application.

Where the change in speed is to be adjusted manually only, the unit is provided with a readily accessible hand-wheel control. However, it can be equipped for electric remote control. Manual remote control is also possible. The present range of capacities offered include ratings up to 33 horsepower, with ratios as high as 3¾ to 1. It is expected larger ratings will be developed.

The unit has been designed to fill the need for equipment wherever a substantial change in speed is desirable better to control production. It is especially applicable where material-handling equipment must be controlled.

Flexible-Blanket Insulation for Boilers Stands Hard Usage

With substantial savings in fuel costs effected by modern steam-saving rotary drilling machinery, operators are becoming more conscious of the



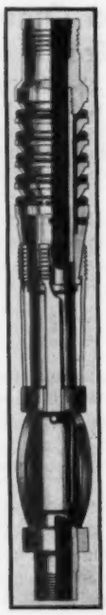
heat losses due to radiation and convection from uninsulated boilers. These heat losses now are given careful consideration not only from the standpoint of fuel economy, but from the standpoint of boiler capacity. Oilfield boiler insulation has demonstrated in carefully conducted tests that it effects savings in fuel consumption and increases boiler capacity.

Believing general use of boiler insulation has been retarded by the cost of keeping insulating material in repair when rigs are moved, Oil Well Supply Co. has introduced a flexible-blanket insulation which withstands hard usage and is easy to install and remove. This insulation, resistant to both heat and moisure, consists of an inner sheet of strong wire-inserted asbestos canvas, a filling of mineral wool, and an outer covering of weatherproof and mildewproofed wide-numbered duck. Quilting holds the mineral wool in place.

"Oilwell" flexible-blanket insulation is furnished in sections, which are wrapped around the steam generator or boiler and are easily handled in the field. Sections are made up to fit the "Oilwell" portable superheated steam generator (illustrated) and all sizes and makes of oil-country boilers. The construction and application of this flexible insulation and the savings it effects are described in Bulletin No. 185, obtainable from any branch.

Benefits of Lane-Wells Packer Receive Wider Recognition

As progress is made in the oil industry more uses and advantages of the Lane-Wells production type packer, manufactured by Lane-Wells Co., 5610 South Soto Street, Los Angeles, Calif., are being recognized.



The packers may be used with any type of equipment designed to prolong the gas-lift stage of producing wells. The soundness of design is said to have been proved by years of service. The packers have remained set for as long as four years, under severe temperature conditions, and withstood maximum pressures without a reported instance where the packing element has vulcanized to the casing.

Multiple packing-rings are used in the packer, each consisting of layers of heavy, graphite-impregnated, bias-cut fabric molded over and around a one-piece rubber core. The layers of fabric prevent vulcanizing to the casing and the rubber core assures elasticity to draw the rings away from the casing when the packer is released. This multiple-ring packing assembly provides fivefold safety in sealing off, to assure a perfect pack under high pressures. Where space is available maximum bypass area is provided, minimizing swabbing action while running in and out of the hole.

Special packers, designed to meet unusual well conditions, have constituted a substantial part of Lane-Wells' business for years, and inquiries concerning special problems are invited by the company.

Tubing-Drain Affords Greater Safety to Derrick Workmen

An important contribution to safety is claimed for the new AC and C tubing-drain, introduced by Alexander & Marr, distributors, of Seminole, Okla. It is said to provide a positive means of draining tubing, eliminating fire hazard and protecting men from danger of infection due to crude-oil baths. It permits acidizing through tubing without removing the standing valve; provides means of applying paraffin solvent without pulling rods; saves many stripping jobs due to "sanded-up" pump, but positively drains tubing, even when the pump cannot be unseated; drains slowly, preventing surging action on the sand.

The AC and C tubing-drain is one of many specialties distributed by Alexander & Marr, a comparatively new company handling a varied line of oil-field equipment.

Two New Pumps Developed for Wells of Low Fluid Level

The Walter O'Bannon Co., Tulsa, has added to its line of subsurface equipment two new pumps to meet a difficulty which operators encounter in pumping low-fluid-level wells. Without changing the position of the seating-nipple, the operator is enabled to pump 16 to 30 feet lower in the well.

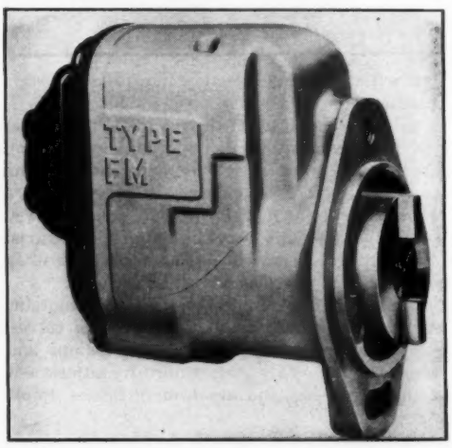
The stationary barrel type Arrow rod pump features an O'Bannon Cro-lay barrel in conjunction with a composite plunger made up of heat-treated electric-alloy cast-iron plunger sections.

For wells in which sand conditions are not so severe as to require an Arrow pump, the new stationary barrel-type DeLuxe rod pump is offered. With this pump, the operator has a choice of four different plungers: repack, eight-cup, combination, or discpak.

Both of these pumps employ a top seating device so constructed that the fluid discharge will prevent sand from settling around the hold-down in the tubing. Pump lengths are 8, 10, 12, and 15 feet. Heretofore these two pumps have been available in the traveling-barrel type, and the engineering design of both is said to have been proven sound by extensive field experience.

Unusual Quality Alloy Is Used in Manufacture of Magneto

Fairbanks, Morse & Co. has announced from its magneto division in Beloit, Wis., development of its new Type FM magneto, which is said to combine the latest achievements in metallurgical research and modern design practice. Alnico, an



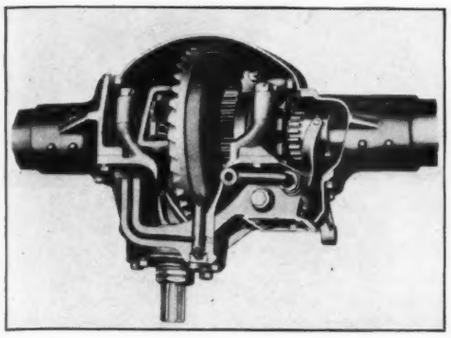
aluminum-nickel-cobalt alloy possessing marked qualities for the production of permanent magnets, has been used in the Type FM magneto. Through field and laboratory tests extending over two years the entire design has been carefully adapted to the new magnets. This has increased power output and reduced size and weight of the unit.

The new design is similar to that of the widely used F-M Type RV in that the magnetic rotor is of die-cast construction and the housing is aluminum alloy, die-cast in one piece. The magneto is completely waterproof. A totally sealing housing provides the protection against dust and moisture essential to reliable engine performance. Design and proper selection of materials are said to assure operation under any temperature extremes.

Service adjustments have been simplified. Changes in the breaker point supports permit quick and accurate setting of the breaker point gap. Grease-packed ball bearings, which require no further attention, eliminate lubrication and bearing troubles. The distributor-end cap has a built-in window, so that timing can be easily accomplished without removing the cap from the magneto.

Trucks With Two-Speed Axles Announced by Ford Motor

Designed for a wider range of operating requirements, Ford V-8 trucks equipped with two-speed axles are now available, the Ford Motor Co. announces. The 157-inch and 134-inch wheelbase



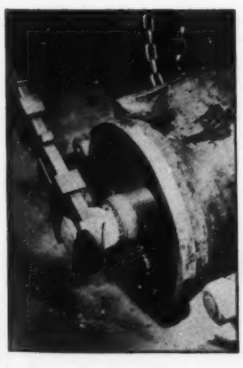
trucks and the 191-inch wheelbase school-bus chassis are offered with it. The new trucks have eight forward speeds and two in reverse. Gear ratios which closely fit varying load and road conditions thus are provided.

The new Ford two-speed rear axle has virtually the same basic features of design as the conventional Ford truck axle. The pinion-shaft is straddle-mounted with two large tapered roller bearings in front of the pinion and a straight roller bearing directly behind it. Differential side bearings also are of the tapered roller type. In the reduction only four additional moving parts are in operation. A simplified planetary system of gearing is used to effect the reduction. Shifting from one axle ratio to the other is accomplished by means of a lever mounted at the left inside the cab. When this lever is in its forward position, the axle operates the same as a conventional rear axle.

A novel method of forced lubrication has been incorporated in the design of the axle which provides positive lubrication to all bearings.

Task of Removing Broken Pipe Is Simplified by Extractor

Reps Tool Co., Inc., 220 Delaware Avenue, Buffalo, N. Y., announces the Reps extractor as the answer to the problem of removing broken pipe and studs. The patented four-point grip prevents the device from reaming and assures a strong bite without hammering or pounding. The shallow grip lessens any expansion and jamming. A built-in reamer automatically removes burrs from pipe, eliminating interference with the bite and minimizing cause for expansion of the broken piece. The extractor pulls, rather than reams.



The compact one-piece design makes this appliance strong, durable and easy to handle. Heat-treated forged steel with a brinell hardness of 490 gives a toughness exceeding that of materials with which it will come in contact. Electrolytically plated cadmium provides a permanent rust-proof surface.

The extractor releases instantly after its job is completed. Broken pieces of pipe are removed by inserting the tool straight into the pipe so all four points bite at the same time. Turn with a wrench. To remove studs, screws, or bolts, drill a hole in the exact center of the broken part just deep enough for the extractor to get its shallow grip. The set of 10 extractors fits every size and class of pipe, standard, heavy or extra-heavy, from one-eighth inch to 2-inch. This same set fits screws and bolts from seven-sixteenths inch to 3½-inch.

New Posts for Star Drilling Men

Two changes in assignments of its representatives are announced by the Star Drilling Machine Co., Akron, Ohio. D. A. Smith has taken charge of operations for the company at its ware-

D. A. SMITH *N. D. MORRIS*

house in Abilene, Tex. Mr. Smith has been in the home office of the company for the past 12 years, serving in both the engineering and manufacturing divisions. N. D. Morris, who for several years has been selling Star spudders in the East, has been transferred to West Texas territory.

Union Wire Rope Election

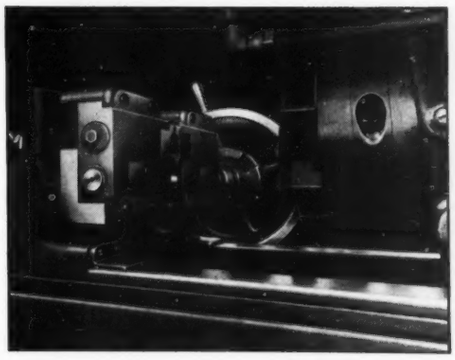
At the meeting of stockholders of Union Wire Rope Corp., Kansas City, Mo., held in Kansas City all directors were reelected, and officers were chosen as follows: Chairman of board, R. H. Bartlett, Tulsa; president and general manager, M. G. Ensinger, Kansas City; vice president and treasurer, J. H. Hatch, Kansas City; vice president and general sales manager, L. G. Schraub, Kansas City; vice president and manager of oil country sales, H. R. Gruber, Tulsa; secretary and assistant treasurer, J. C. Soll, Kansas City; chief engineer and assistant treasurer, Walter Voigtlander, Kansas City; assistant secretary and assistant treasurer, H. M. Lawrence, Tulsa.

Gripping or Releasing of Work Simplified by Landis Device

The Landis Machine Co., Waynesboro, Penn., has developed a new carriage-front or vise, which can be supplied as optional equipment on the Landmaco threading machine. This carriage-front is a combination floating unit, which compensates automatically for any misalignment of the work with the diehead, and a special vise-jaw operating handwheel which delivers a hammer-like blow to effect the gripping or releasing of the work with minimum expenditure of effort.

The carriage-front consists of a vise so mounted on a series of three plates as to provide both a horizontal and a vertical floating action. The vise maintains a centralized position except when forced off center by misalignment between the diehead and the work. The rear plate, bolted direct to the carriage, is provided with adjusting-screws, which permit adjusting the entire unit either horizontally or vertically in relation to the center of rotation.

The center plate provides the vertical floating action for the vise. Two springs and plungers



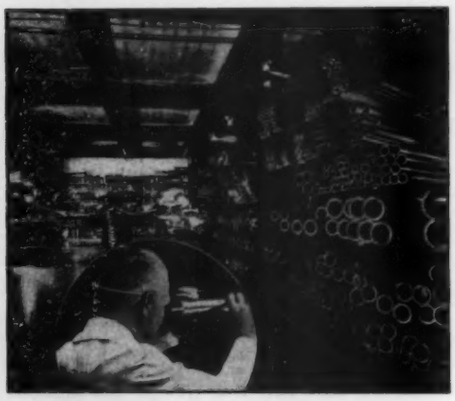
are mounted in a vertical position on the outer ends of the center plate in such a manner that the lower ends of the plungers rest upon two supporting lugs which are cast into the outer ends of the rear table. The springs are readily adjustable so that the degree of their compression can be varied to compensate for the weight of heavy parts. The spring nearest the handwheel is somewhat heavier than the other spring to assume the additional load set up by the weight of the handwheel and the torque of the cut taken by the diehead.

SCHLUMBERGER OCCUPIES NEW EAST TEXAS BUILDING

The new East Texas branch office building of Schlumberger Well Surveying Corp. was put into use recently. This modern, air-conditioned structure, in Tyler, is next door to the large Schlumberger district headquarters for all truck units serving East Texas. In the picture are shown W. J. Lytle, engineer; R. T. Wade, district manager; C. A. Doh, engineer in the East Texas territory.

Ryerson Is to Carry Stocks of Timken Mechanical Tubing

The Steel and Tube Division of the Timken Roller Bearing Co., Canton, Ohio, has appointed Joseph T. Ryerson & Son, Inc., to warehouse Tim-

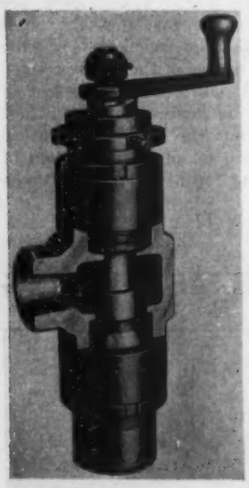


ken mechanical tubing (S. A. E. 1015 steel) in territories served by Boston, Jersey City, Philadelphia, Buffalo, Cincinnati, Chicago, St. Louis, Cleveland, Detroit, and Milwaukee.

A large demand is said to have developed for this tubing, and production is geared up for large runs, but maintenance of warehouse stocks has presented a problem. With the Ryerson company's warehouses carrying a complete stock, this product now is available for immediate shipment.

Release Valve Jumps Clear of Seat When Seal Is Broken

A new style release valve, developed and manufactured by Brauer Machine & Supply Co., Oklahoma City, has new features designed to afford increased efficiency, safety, and durability.



The valve, a quick-opening type, is for use on mud or water lines only. The most important advantage of this valve is its improved stem, which is designed with enough play to let the valve jump clear of the seat when the seal first is broken. Thus most of the abrasive action on the seat is eliminated when the valve is beginning first to leave the seat, the manufacturers say. Also the heavy screw which opens and shuts the valve prevents "kicking," caused by high pressures, thereby assuring greater safety. The new valve is now available through supply stores.

Wider Range of Use Found for Flexible Coupling Principle

Lovejoy Flexible Coupling Co., 5009 West Lake Street, Chicago, announces to manufacturers of oil burners, refrigerators, and other equipment where the load is not in excess of one-fourth horsepower, an application of the L-R flexible coupling principle. The L-R coupling principle is to carry the power by means of metal jaws keyed to the driven and drive shafts, respectively, between which is interposed a resilient cushion of a type suited to the requirements of the operation. This makes lubrication unnecessary and, as there is no metal-to-metal contact, L-R couplings are said to be long-lived and noiseless. They absorb shock, overload, torque and other stresses.

This new type Double-flex 3-piece L-R flexible coupling, styled UX, consists of two jaw units and a cushion unit made of a solid, tube-shaped section composed of hard rubber (about 90 durometer), except where it contacts the jaws, where it is fashioned out of a softer, more resilient rubber (about 30 durometer). This assembly produces a coupling that is described as strong and durable, adequately flexible, smooth-running, and noiseless.

Here and There With Men Who Manufacture Equipment

Walworth Co., New York, has assigned E. L. Clark to the Shreveport, La., territory, which includes lower Arkansas, East Texas and the Louisiana Gulf Coast.

Dick Tibbs, formerly Gulf Coast sales representative for the Gulf Coast Machine & Supply Co., has joined the sales and service staff of Brown Oil Tools, Inc., of Houston, Tex. He is covering the South Texas territory, with headquarters in Corpus Christi. Tibbs' experience in the oil fields covers more than a decade.

The Foster Wheeler Corp. has moved its Pittsburgh, Pa., office to 1344 Oliver Building.

Charles W. Sulzer, service engineer for Baroid Sales Co., Los Angeles, Calif., has been transferred from Odessa to Hobbs, N. M.

The Duff-Norton Manufacturing Co., Pittsburgh, Pa., has moved its New York office from 250 Park Avenue to 3411 Empire State Building.

Two new distributors for Toncan iron sheets have been appointed by Republic Steel Corp., Cleveland, Ohio. They are: Herre Brothers, Harrisburg, Pa., and Sabine Supply Co., Orange, Tex.

The Lufkin Foundry & Machine Co., manufacturer of pumping units, has opened an office in Shreveport, La., to serve the oil fields of North Louisiana and Arkansas. The office, 312 Ward Building, is in charge of C. S. Hardin.

Come-Along Handy Tool When Something Is to Be Pulled

The Come-Along, manufactured by J. E. Shaffer Co., 630 East Cameron Street, Tulsa, is a handy tool of many uses, such as binding loads, moving

machinery and small buildings, pulling cars out of the mud, stretching fence, hoisting—in fact, where almost anything is to be pulled.

Weighing 20 pounds, it is furnished complete with 5 feet of chain. The drag-hook on one end can be attached to another chain, rope, or wire. The Come-Along, the manufacturers say, will pull up to 2,000 pounds, without lengthening the handle with a cheater. If a load becomes loose in transit, it takes just a few minutes for tightening. Ratcheting the handle either way tightens the load and is a positive lock in any position. The tool is tested to stand over 3 tons.

William Woelflin Joins Petreco

Petroleum Rectifying Co. of California has appointed William Woelflin its California district manager with headquarters at the company's offices in Long Beach. Mr. Woelflin has been with Petreco 12 years, serving as research engineer in the laboratory at Long Beach and for the past two years as California district engineer. He is well known to the oil refining industry through his technical articles in oil publications. A graduate of the University of Cincinnati with the degree of chemical engineer, and a member of Tau Beta Pi, honorary engineering society, Mr. Woelflin entered the oil business on leaving school.

TEXASTEEL LOOKS READY FOR THE BASEBALL SEASON

Rooters for these two teams which represent Texasteel Manufacturing Co., Fort Worth, Tex., confidently assert the players will wear smiles of the same dimensions at the close of the 1938 season. The boys in the white uniforms are members of the soft ball team, in the Southern League. Those in the dark uniforms are members of the hard ball team, in the National League.

Vogt Drop-Forged Steel Valves Now Have Identification Disc

Vogt drop-forged steel valves, made by Henry Vogt Machine Co., Louisville, Ky., are now available with Parkerized valve-bonnets, bonnet-nuts, packing-glands and packing-nuts. This rustproofing process is designed to eliminate galling of

threads due to atmospheric corrosion, making it easy to service the valve and maintain high operating efficiency.

Another feature is the identification disc held in place by the handwheel nut. This disc records the valve size, catalog number, working pressure and temperature, and style of trim, making it easy to order replacement parts if that should become necessary.

Roth Transferred to Dallas

J. V. Roth, formerly manager of the Bakersfield division of the O. P. Yowell Service Co. of California, has been transferred to Dallas, Tex., where he is to be general field manager for the Eastman Manufacturing Co. Mr. Roth has been active in California oil fields for 25 years and is considered an authority on perforation washers. In his new position he will have the responsibility of introducing the Eastman-Yowell perforation washers in the Mid-Continent and Gulf Coast districts.

Self-Aligning Packing-Gland Is of Wide Use in Oil Industry

Crane Packing Co., 1880 Cuyler Avenue, Chicago, is offering a new-type conical, self-aligning packing-gland adapted for ammonia, air- and gas-compressors, reciprocating pumps and engines. Records are said to show that on some jobs which formerly averaged a repack every 30 to 40 days, this packing carried the same compressors 12 months or more.

The gland-cup is made from nickel-steel and fine bearing bronze, machine finished inside and out. When installed, it is packed with "John Crane" Super-Seal split packing inserts moulded to fit the gland. The inner surface of the cup is tapered, the effect of which is to force the packing around the rod with each stroke of the piston, instead of merely compressing it in the gland and stuffing-box.

This packing-gland is adaptable for use on both the steam and liquid ends of pumps, and the power and compression ends of gas-compressors handling cracking coil gases, still gases, butane, propane, natural gas, ammonia; also in pumps handling asphalt, tar, sludge, tank-bottoms, liquid propane, butane. It is said to have built up a record on reciprocating pumps on bottom service, distillate service, reflux service, flash corrector service, high-pressure gas-compressors, and other refinery services where high pressures and temperatures create packing problems.

Evaporation Losses Decreased by Using Enardo Tank-Valve

Evaporation losses are reduced by the improved vacuum pressure valve manufactured by Enardo Foundry & Manufacturing Co., 2729 Sand Springs Road, Tulsa. It is spark-proof, weatherproof, corrosion-proof, fool-proof and leak-proof. The design is said to make it impossible for the valve to be held open because of sand or other causes. A shelf is provided so that an oil-thief can be used. This is so arranged as to prevent oil from spilling on the tank-deck.

The Enardo valve is made of rust-proof malleable cast-aluminum alloy, with flexible neoprene synthetic rubber gaskets, in several sizes, applicable to all standard capacity tanks. Special valves can be furnished for standing storage and refinery tanks. The original Enardo valves placed on the market 7 years ago are still in operation.

Assigned to Southwest Louisiana

J. C. Norris, who has been associated with Kane Boiler Works, Inc., Galveston, Tex., for 22 years in various capacities, has been appointed southwest Louisiana representative for that company.

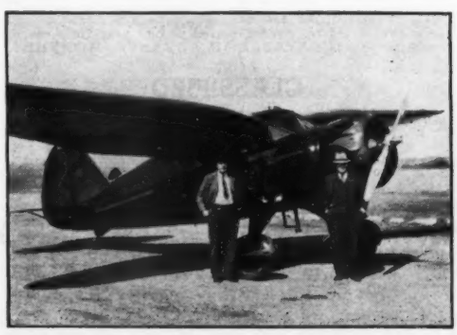
Mr. Norris will be in charge of Kaneweld field service and Kaneweld pipe sales in that territory. Offices have been opened in the New Gordon Hotel, Lafayette, La.

Key Offers New Line of Fittings

The Key Co., East St. Louis, Ill., maker of return bend fittings for oil stills, announces a new line of fittings for polymerization and hydrogenation plants. These fittings have been especially developed for operation under extreme high pressures and high temperatures. Several installations have been made during the past year using this equipment. The company has a complete line of refinery return bends, including the 3600 series, which is being used by refineries throughout the world. This series involves the use of exclusive features covered by original Key patents.

JENSEN BUYS SECOND PLANE

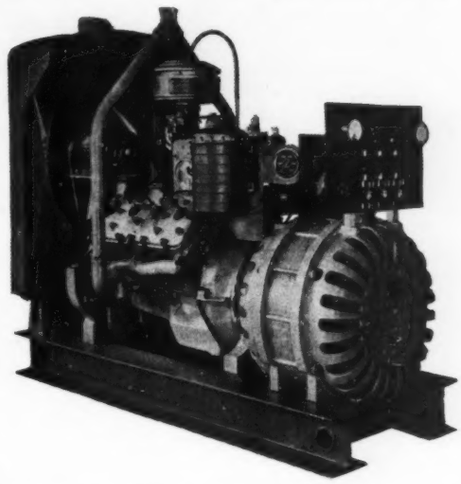
Jensen Brothers Manufacturing Co., Coffeyville, Kans., manufacturer of pumping equipment, has acquired a second plane, the five-place Stin-



son shown. The plane, equipped with a 285-horsepower motor, a controllable-pitch propeller, and a two-way radio, will be used in making sales and service contacts throughout the country. Both W. G. Jensen and K. R. Jensen, who appear in the picture, are pilots.

General Power Generator Unit Has Wide Use in Oil Field

General Power, Inc., Quapaw, Okla., has placed on the market a new Ford V-8 driven generator unit, of wide use in the oil field, which is said to have shown high performance. The standard unit is 20 kva, 1,200 r.p.m., 120-208 volts, 3-phase;



but 25 kva, 1,800 r.p.m. is optional. The unit is provided with voltage-regulator, tachometer, top oiler, oil-purifier, safety oil switch, and instrument panel with voltmeter, ammeter, generator, and exciter rheostat, fused main switch. This generator is three-phase, four-wire, for both lights and power. The construction is such that it can readily be paralleled.

One of these generators is equivalent to a 20,000 watt-light load or a 16-kw power load. The largest individual motor that can be thrown on the line at one time is 5 horsepower. For lighting, one generator will handle the following provided the distance from generator to light farthest away is wired for sufficiently heavy wire to eliminate line voltage drop: 100 200-watt lamps, 200 100-watt lamps, 333 60-watt lamps, 500 40-watt lamps, 666 30-watt lamps, 750 25-watt lamps, or a combination of various wattages making a total of 20,000 watt lamps.

The design of this machine is for continuous 24-hour operation. The rotor weighs 148 pounds and gives a flywheel effect to the engine. The rotor is 6-pole type in order to get the proper cycles and operates at 1,200 r.p.m., the engine speed.

South Bend Offers New Line of Industrial Ventilating Units

South Bend Air Products, Inc., 322 East Colfax Avenue, South Bend, Ind., is offering an improved line of industrial ventilating equipment. There are 2-, 4-, and 6-blade Dynaflow fan units in sizes from 16- to 36-inch diameter having air deliveries from 1,240 to 26,000 C.F.M.; also Aerospot fans of the mobile and portable type in sizes from 20- to 36-inch diameter, which are effective as man coolers at distances of 50 to 175 feet.

The fan-blades on all South Bend Dynaflow and Aerospot units are designed to produce uniform air velocity across the entire working portion of the fan-disc. All fan-blades are manufactured from the highest strength aluminum-alloy drop-forgings and consequently are practically unbreakable.

Intake rings for all Dynaflow fan units are designed to prevent back flow and to reduce tip losses in the blades, and are manufactured from rolled steel to eliminate possibility of breakage. Motor supports for Dynaflow fan units are manufactured from rolled steel, and are designed to have negligible resistance to air flow.

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Write for descriptive folder of Oilfield and County Ownership Maps.

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NEW colored map of entire San Joaquin Valley, California, $7.50. Shows all oil and gas fields and prospect wells, with status on March 10, 1938. Earl M. Price & Co., Bakersfield, California.

Leases and Drilling Blocks

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El Dorado, Union County, Arkansas, Magnolia, Columbia County, Arkansas. Fee, Lease and Mineral ownership on short notice. Ownership maps.

LEASES, Royalties and drilling blocks throughout present hot play southern Arkansas. El Dorado Oil Exchange, Garrett Hotel Building, El Dorado, Arkansas.

NEW MEXICO Oil Leases for sale, Wholesale. Inquiries invited. Write, Box 507, Las Vegas, New Mexico.

DRILLING DEAL WANTED: 8,000 A. in Washita Co., Okla., centering around Secs. 19-30, Twp. 11, R. 15, and Secs. 24-25, Twp. 11, R. 16; 13 mi. NE of Cordell; next rental due March 31, 1939. H. H. KLASSEN, Box 55, REEDLEY, CALIF.

HAVE 500 acres, production on four sides. Good structure. Four sands. Will sell 1/32 interest $100. 1/2 interest $1600 and drill first well. Particulars Box 10, Kincaid, Kansas.

FOR INFORMATION ABOUT
South Georgia, Oil Leases and Royalties, where Pan-American is drilling a deep test, write
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GEORGIA OIL INFORMATION SERVICE
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WILL DEVELOP shallow production for owner, give full particulars in first letter. Apply to Box J-362, The Oil and Gas Journal, Tulsa, Oklahoma.

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Leases and Drilling Blocks

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New Mexico OIL LEASES WHOLESALE
40 acres at a time.
Roy G. Barton, Clovis, New Mexico.

LEASES—East Texas, La., South Ark. 20 acres up, dollar acre up. Owners—Address Attorney, Box 1122, Little Rock, Ark.

OIL LEASE DEALERS and salesmen write H. D. Wilcox, Marfa, Texas, for the best deal ever offered near drilling well.

SPECIAL offerings, Leases and Royalties, joining section well drilling in proven field, eight producers. Also land in fee, potential oil country. J. N. SWANSON, Sayre, Oklahoma.

WILL BUY 10 to 100 bbls. production with room for future development. Give details. Suite 406, Beacon Bldg., Tulsa, Okla.

LEASES—ROYALTY. Few small tracts around the Dobbs Oil Co.'s Ordovician Wildcat Eastland County block. Low price. E. CROFT, Proctor, Texas.

ECTOR CO. oil leases—Texas farms—Dallas homes, all kinds. Write your wants. Anderson, 1014 S. Cumberland, Dallas, Texas.

NEED drilling contractor for 3500-5500 foot well in State of Mississippi. 328 Whitney Building, New Orleans, La.

Tex., La., Okla., Ark., Kas., N. Mex., producing and potential royalties, leases, drilling blocks, lands, bought-sold. American Investment Co., Houston.

Help Wanted

WANTED—Chemist having five or more years' experience in charge of asphalt manufacture, corrosion control, treating, boiler feed water control, research and shipments. Must have technical education as well as practical training and ability to organize this department. State salary desired. Address Box J-374, The Oil and Gas Journal, Tulsa, Oklahoma.

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Man in position to make investment of at least $10,000 wanted as manager or superintendent of refinery located in high freight differential territory. The United Refining Co., Box 634, Russell, Kansas.

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EXPERIENCED gas engineer, specialist in measurement and control division of Natural Gas Industry. Sixteen years diversified practical experience. Good references. Address Box J-375, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER thoroughly experienced in construction, operation and maintenance of modern refineries including combination topping and cracking units, vacuum eqpt. and mfg. of light and heavy oils. Young man. Address Box J-370, The Oil and Gas Journal, Tulsa, Oklahoma.

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13⅜" SEAMLESS

Real bargain in one lot of 801 feet of 13⅜", 61-lb., 9" long collar Used Seamless Casing. 31 joints. All or any part offered f.o.b. Wichita yards at very reasonable price. Ph: 2-1431 or LD-59.

WATER WELL PIPE

7" OD (6⅝"). Good used water well quality pipe at water well pipe prices, on hand at Odessa, Pampa, Chase, Russell, Hutchinson and Wichita.

8⅝" CASING

String of extra good 8⅝" OD (8¼") 32-lb., 8-thd. Lapweld Used Casing for delivery from Pampa yards. This lot contains 179 joints, 3,796 feet. Better than average quality. Ph. Pampa: 884.

SURFACE PIPE

12½" and 15½" good grades, strictly competitive prices. Ample stocks at Kermit, Houston, Odessa, Pampa, Chase, Hutchinson, Russell and Wichita.

CABLE TOOL BITS

Excellent set of 8¼" Murray Bits. Approx. 7' long, 4⅝" Pin, good collars. Weight each 610 lbs. In Pampa store. Also one 8¼" Leidecker Spiral Bit, practically new. 7-ft. long, 4¼" Pin, 656 lbs. Ph. Pampa: 884.

DRILLING BOILERS

(3) 100 h.p., 200-lb. WSP Brodericks and (2) 125 h.p., 250-lb. WSP Lucey Camel Back Oil Field Boilers complete with good stacks, doors, manhole, handhole plates, steam gauges, etc. All excellent boilers suitable for Rotary drilling. Lowest used boiler prices. In stocks at Corpus Christi. Ph: 574 or LD-31.

TUBING CATCHER

Almost new 5-3/16" x 2", 10-thread Upset Byron Jackson Sure Stop Tubing Catcher, less anchor. This has been used very little and is practically the same as new. Price: $85 f.o.b. Seminole Store. Ph: 52 or LD-15.

PUMPING DERRICK

67' Prairie Pumper Derrick. Tubular construction with ladder and 6" H-Beam single Sheave Crown Block. 3" ID legs with 2" re-enforcements inside. Good condition and complete. Good price f.o.b. Wichita yards. Ph: 2-1431 or LD-59.

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6⅝" Brauer, good as new. One each at Kilgore, Seminole and Wichita stores. Price each: $50 f.o.b. stock location.

STEEL TOOL HOUSE

6-ft. x 6-ft. x 10-ft. single door type. No built ins, but in good condition. Very attractive price, f.o.b. Oklahoma City store. Ph: 7-2725.

SPANG JARS

Set 5½" x 36" Stroke Spang Fishing Jars. Good condition and cheap price, f.o.b. Russell Store. Ph: 434.

THE BRIDGEPORT MACHINE COMPANY
Wichita, Kansas and Branches

CLASSIFIED DISPLAY RATES

Classified Display is set with a border and may be used in one or two column sizes.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line, PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White-space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times		1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*	*7 Lines*	*$2.45*	*$4.20*	*$5.95*	*$7.70*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*	*8 Lines*	*2.80*	*4.80*	*6.80*	*8.80*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*	*9 Lines*	*3.15*	*5.40*	*7.65*	*9.90*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*	*10 Lines*	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
Tulsa, Oklahoma